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Oil, Paint and Drug Reporter

VOLUME 90. NUMBER 14. MONDAY, OCTOBER 2, 1916. 100 WILLIAM ST., NEW YORK.

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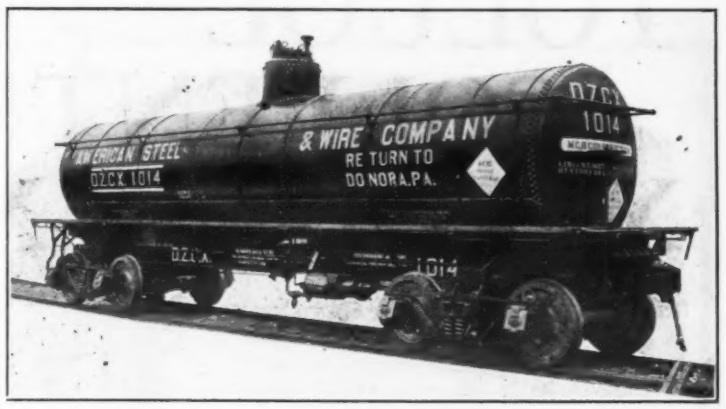

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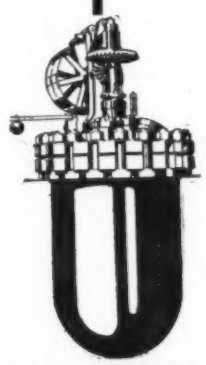

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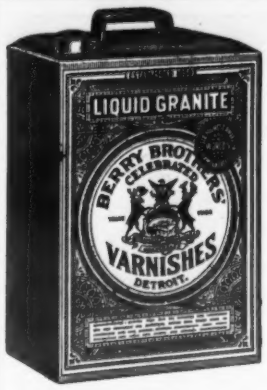

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OCT 2 1916
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Oil, Paint and Drug Reporter

VOLUME 90. NUMBER 14. MONDAY, OCTOBER 2, 1916. 100 WILLIAM ST., NEW YORK.

The OIL, PAINT AND DRUG REPORTER Is Mailed on Saturday, Dated Monday.
ESTABLISHED 1871.

The following publications are incorporated in the OIL, PAINT AND DRUG REPORTER:

DRUG, PAINT AND OIL TRADE — NEW YORK DRUG BULLETIN
NEW YORK DRUGGISTS' PRICE CURRENT
SOAP MAKERS' JOURNAL — OIL AND PAINT REVIEW
WEEKLY DRUG NEWS

Published every Monday by the OIL, PAINT AND DRUG REPORTER, at 100 William Street, New York. William O. Allison, President; D. G. Bogert, Secretary.

SUBSCRIPTION TERMS.—For the United States, $5.00; Canada, $6.00; other foreign countries, $7.00 per annum. All remittances should be made payable to the OIL, PAINT AND DRUG REPORTER.

ADVERTISING RATES will be furnished upon application.

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Entered at the Post Office at New York as second-class matter under the Act of Congress of March 8, 1870.

"Chemists' Week"—A Milestone on the Path of Progress.

For the first time the great American public, and particularly that section of it which has its habitat within easy distance of New York City, has begun to realize what the chemists of the nation are doing and have done in the development of our greatest national industries.

"Made in America" has assumed a new and more vital meaning. In contradistinction to that other famous trade slogan which aroused competitors in the British Empire and in France to new exertions—"Made in Germany"—the "Made in America" prefix implies not only an increased domestic output along chemical lines, but the creation within a few short years of industries which bid fair to become particularly identified with the United States.

While it is true that chemical science progresses along consistent lines among all chemical-exploiting nations, in the Far East as well as in the heart of the great laboratory and university nation now involved in world war, there have been new exemplifications and new ideals of progress which have been emphasized for the first time in this country. True the seed may have been of overseas origin, the laws governing processes the result of years of patient investigation by men of another race, but in their application to new needs, with new resources, new sources of power, "Yankee ingenuity" in the adaptation of machinery, and the driving power for which American workers are noted the world over, the harvest has been plenteous and surpassing fine.

The joint convention last week of the American Chemical Society, the American Electrochemical Society and the Technical Association of the Pulp and Paper Industry, taken in conjunction with the wonderful display of the results of American effort as crystallized in the Second Exposition of Chemical Industries, have established a new precedent in national scientific industrial endeavor.

From the laboratory, the furnace, the university and from government departments have come the best of the nation's trained men. They have contributed fully and freely of their hard-won secrets for the glorification of their craft and the development of their country. Almost every topic applying to productive activity has been canvassed, since chemistry is the mother of the modern handicraftsman, and her sons are at the forefront in every branch of endeavor. To the symposia have contributed the educator, the investigator, the sanitation and health worker, the magicians of the crucible and the retort, the patient demonstrators by formulae that x plus y plus many another symbol, properly combined will produce inevitable results.

There has been no partisan self-glorification in the slogan of the chemists of America in convention assembled. "Made in America," to them is but the expression of an ideal—not alone of production, not alone of deduction, not alone of investigation. Being freely translated—for it is but a formula of progress, a chemical formula if you like—it spells this:

The greatest opportunity America has ever seen awaits the grasping. The chemist, as an essential factor in modern industry, has at last been granted a modicum of the appreciation he so well deserves. Outside disturbances of world trade and world production have swept new and strange industrial visitors to our shores, and the world is awaiting our verdict.

The American chemist does not hesitate. The keynote of his ideals and his beliefs was struck with no uncertain hand at every session of the allied chemists the past week.

"Made in America" is just as much the symbol of an ideal as of finished effort, and in this, lies its essential difference to other world slogans so similar in sound, but signifying something far remote from the ideals governing the men whose hosts we have been privileged to be during an all too short visit.

Chemists Condemn Congressional Action on Dyestuffs.

"We condemn the removal of natural and synthetic alizarin and dyes obtained from alizarin, anthracene and carbazol, natural and synthetic indigo and all indigoids, whether or not obtained from indigo, from the special tariff accorded them by the Senate, as detrimental to the establishment and development of the American dyestuff industry and subversive of the best interests of the American people."

Such is the wording of condemnatory resolutions passed by the American Chemical Society at its "Dyestuffs Conference" on Wednesday last, following acrid debate and severe criticism of the action of Congress in agreeing to the conference report on the dyestuffs sections of the revenue bill which recently became law through the signatory affirmation of the President.

There was not a dissenting vote to this official disclaimer of the action of the Senate and House conferees, particularly as the point was emphasized that these excepted classes of dyes form 30 per cent. of the dye consumed in this country, without taking into consideration aniline dyestuffs controlled by patents of foreign manufacturers.

Following the interview with Director Ralph of the Bureau of Engraving and Printing at Washington, published in the Oil, Paint and Drug Reporter of September 25, and his statement that this government is again turning to German manufacturers for its supplies of printing reds and China and Prussian blues, which can only be imported by permission of the British government, further light has been thrown upon the reasons why the Director was forced to seek a supply abroad. In an interview given a representative of the Reporter, which will be found elsewhere in this issue, Mr. Ralph made the following statements:

That he is in sympathy with the idea of purchasing supplies for his Bureau from American manufacturers.

That it is impossible for him to obtain such dyes, although at frequent intervals during the past two years he had made persistent attempts to obtain them from domestic sources.

That there are not 1,000 pounds of reds suitable for use of the Bureau in the United States at the present time.

That the only color he is certain of in this country is black, and that he makes his greens by mixing blue and yellow, and is buying all the yellow he wants in this country.

That as things now stand if he were obliged to depend on the American market for colors he would either have to shut down or use a substitute, and that substitute would be black, because he cannot get the reds.

Director Ralph further expressed his belief that American chemists could produce every pound of color used in the Bureau of Engraving and Printing. The fact that it is not being produced here, he believes, is due to the existing opportunity to make more money in supplying cheaper colors to the textile trades.

With this statement as a basis, the chemists at their dye conference adopted a resolution setting forth the conditions as advanced by Direcor Ralph, and expressing the belief that it is the province of the American Chemical Society to investigate the status of American dyestuffs manufacturers as possible sources of such supplies for government use, referring the matter to the same committee appointed to consider the revenue bill indigo and alizarin exemptions.

In the debate pending the adoption of the resolutions the statement that Director Ralph had sought relief from American dyestuffs producers was denied, although the Director of the Bureau, in his interview in the Reporter of this week specifically names thirteen firms with which he communicated in regard to possible supplies.

With such an immediate reponse to a condition thus officially brought to their notice, and the immediate suggestion made by certain large aniline color producers in this country that an attempt would be made to meet the demands of the government, and remove it from its position as a supplicant to international courtesy at a time when the embargo lines are being drawn closer about Continental Europe, there seems to be a promise of hopefulness.

The production of aniline dyestuffs in this country during the past two war-years has expanded to an almost unbelievable extent. It has assumed such importance that the licenses have just been granted for the manufacture of German patented aniline colors in this country, a condition indicative to any one conversant with the situation that the American aniline color maker is a factor to be reckoned with. The display of finished colors and samples of the work done with them, as shown at the Exposition, is evidence of the perfection of the workmanship and the stable character of the output of the American chemical dyestuffs laboratory.

In combination with the Bureau of Chemistry of the government, Director Ralph is now seeking to develop an exclusive color for the use of the government Bureau of Printing. The government has appropriated the sum of $50,000 for an experimental dye laboratory under the charge of Carl L. Alsberg, Chief of the Bureau of Chemistry. With this new opportunity for American chemical development, and with a government market open—true, for a comparatively small amount—and with the special committee of the chemists endeavoring to the best of their unusual ability to bring about still further advances in American dye chemistery, the future of the industry in this country is indeed brighter than ever before.

A Year of Achievement by the N. W. D. A.

The National Wholesale Druggists' Association, which meets in 42d annual convention at Baltimore today, has ample cause for satisfaction with the achievements of the past year, and with the changes in legislation and government and judicial rulings which have been obtained for the benefit of the trade. The list of significant modifications or amplifications of such rulings, either beneficial or burdensome, is a long one, but in the work preliminary to satisfactory settlement the officers and committee of the N. W. D. A. played no uncertain part, and to them is accorded ungrudging credit by the thousands of retailers and consumers to whom such burdens had been onerous in the extreme.

While the members of the Association have been practically a unit in supporting the government in the administration of the Harrison anti-narcotic law, objection was made and sustained to certain seemingly unnecessary and involved details in the forms for the delivery of narcotics, and it was only by the unceasing and intelligent efforts of the Association that modifications in these regulations were obtained, which while not impairing the effectiveness of the Harrison law, will remove unnecessary cause of criticism and unite the entire drug trade in the support of this governmental regulative measure.

Since the passage of the so-called adhesive stamp tax, with its provisions requiring stamps of various denominations to be affixed upon packages of perfumes, cosmetics, toilet goods, etc., the Association has been energetic in attempts to secure the removal of this serious handicap to the retail trade. Its repeal, together with the provisions of the section of Schedule A of the tariff in regard to documentary stamp taxes on bills of lading, etc., and the defeat of the amendment calling for the suspension of the customs drawback regulations are still additional causes of satisfaction.

While attempts to secure the passage of the Stephens bill in the interest of the price maintenance policy to which the Association is committed failed at the last session of Congress, it is believed that the attempt will be successful in the near future.

Further gratification is to be gained in the decision of Judge Lacombe

of the United States Circuit Court of Appeals in the "Cream of Wheat" case, which determined the right of a trader to buy from whom he pleased and sell to whom he pleased, and that his selection of seller and buyer was wholly his own concern. Judge Lacombe made the interesting comment that "We have not yet reached the stage where the selection of a trader's customers is made for him by the government." The decision of the court that neither the Sherman nor the Clayton Act had any bearing upon this question is the source of additional satisfaction to the N. W. D. A., which was further heightened by the "price protection" decision of Judge Lacombe in the Victor Talking Machine case.

These, of course, are achievements of interest to everyone in the drug trade in all its allied branches, but the members of the N. W. D. A. have still further reason for satisfaction, and in this instance the application is distinctly personal. During the past year the Park cases have been settled.

After 21 years of litigation suits against the Association and individual members, alleging restraint of trade practices, have been removed finally from the courts and subscriptions from wholesale druggists toward the settlement funds have been in such satisfactory amounts that Secretary F. E. Holliday is satisfied the full amount will be raised before the adjournment of the convention on Thursday night.

This is no mean record of accomplishment. The National Wholesale Druggists' Association, collectively and individually, are "doers, not talkers." They do their talking at their conventions, in committee, and at hearings on topics affecting the drug trade as a whole. And the N. W. D. A. will be forgiven even if some of the talk at the Baltimore convention is self-congratulatory.

Reported Argentine Linseed Shortage Skies Prices.

Cable advices from the Argentine which were received this week confirmed earlier advices that the drought which has existed there for the past two months and more has been killing off the linseed crop. It was at once apparent that the conditions existing in the South American Republic were much more serious than had been intimated.

The earlier reports, which were lacking in detail, but which were all of the same tenor, stated that damage was more than probable unless the dry season were broken by immediate rains. Early last week cables were much more positive in damage assertions. The trade at large, however, was not prepared for the pessimistic reports which were received this week from many different sources. For instance, special information from the Northern part of Argentina was to the effect that the damage was so great that vast areas devoted to linseed had been abandoned entirely, as the possible yield would have been too small to pay for harvesting.

The advices received in New York this week state plainly that at least 75 per cent. of the crop in the northern parts of the Argentine will not be harvested.

Nothing of an official nature has been issued in the Argentine, either in respect to acreage or to forecasting the probable out-turn. Experts in the fields, after deducting the probable loss in production from these abandoned sections, based upon a fair yield per acre for those remaining, assert that the probable yield will not be much, if any, in excess of 20,000,000 bushels. These figures, while from the nature of the premises upon which they are based open to the criticism of exaggeration, indicate at least a marked falling off from the exportable surplus of the last year's crop.

Going back some years, a crop in the Argentine ranging from 20,000,000 to 30,000,000 bushels was considered about normal, since during that period the North Americas—United States and Canada—were such heavy producers of flaxseed that they were in a position not only to supply their own needs but to export flaxseed for foreign consumption.

For the past four years the crop in America has been below normal, so much so that in place of exporting seed the country has been forced to turn to foreign sources of supply to meet domestic demands. With the added demand here Argentine growers of flaxseed immediately increased production, with the result that a crop of 40,000,000 bushels was not exceptional, and the loss in total consumptive supply in this country was made up from South American imports.

This increased production of the Argentine Republic, coming as it did when the shortage here rendered outside production a necessity, proved equal to the demands until this year, when the estimate of the linseed crop in this country is about 12,000,000 bushels short, thus developing the market factor of two great producing countries, both with smaller crops, and the probable available supply of export seed from South America less than had been looked forward to by the world consumers.

For the past three weeks there has been a steady upward movement in the price of seed and linseed oil in domestic markets as a result of the advices—despite their ambiguity—from the Argentine. With more definite information at hand this week, upward revisions became more marked, and on Friday, when it was seen that Argentine seed had taken a jump of 12 cents a bushel in the primary market, the effects were felt immediatly in the Duluth market and in every oil market in this country.

Large consumers of oil have generally taken a bearish view on oil prices and the majority have neglected to cover future requirements, with the result that the news from the Argentine was particularly displeasing to them, since it is taken to indicate that the low price period for oil has been passed.

It must not be forgotten, however, that the time for harvesting Argentine seed is the month of December, and many inquiries have been heard in the trade during the past few days as to whether or not exceptionally favorable conditions in the Argentine during the next two months could not offset wholly or in part the damage to the growing crop now reported, although the extent of the damage has not yet been officially placed. It is, however, difficult to take a roseate view of the outcome, when the definite reports of the damage that has been done, with definite abandonment of many thousands of acres of seed, are taken into consideration.

War-Time Price Studies of Seeds, Spices and Waxes.

The study of the seeds, spices and waxes divisions of the New York drug markets for a period of two years, from August, 1914, until the first of this month, emphasizes in no uncertain manner the deductions made in the similar study last week on botanicals—the increasing number of new sources of supply drawn upon because of the exclusion of Germany, Austria and Turkey and Prussian-controlled colonies from the world marts. In no other division of these market price studies, which have been a feature of the Reporter since July 31, is the demand for new materials from new primary markets more apparent than in the botanical drug market.

There remain but two more studies of the sundry drug and miscellaneous list, which will appear on October 9th and 16th. The period covered is considered by quarters from August, 1914, the first war month, until September 30th, of this year, and the prices prevailing in the New York drug markets are the basis of comparison.

Immediately following the declaration of war many Austrian and German seeds disappeared from the market here, to be followed later by still others as the domestic supply on hand decreased to a minimum. Included in this category were Germany poppy and rape seeds, and both German and Trieste mustard seed, Morocco cumin and Sicily canary seeds. German fennel seed became so scarce as to be almost unobtainable at times, and Levant wormseed soared to almost prohibitive rates as the shortage became acute.

Such substitutes were employed as Levant aniseseed, Mogador cumin seed (African), French and Italian fennel seed, Dutch mustard, Dutch and Spanish canary, Bulgarian and Japanese rapeseed, Dutch, India and Turkish poppy seed, which were not so generally satisfactory in quality, although the prices obtained were, as a rule, about on a parity with those prevailing for the commodities heretofore employed prior to the war.

Similarly in the list of spices regularly quoted by the Reporter, Hungarian paprica disappeared from this market early in the period under review, leaving the Spanish article the sole item available in this group.

With the spices, as in all other instances of Oriental origin, there were two distinct factors which resulted in the limitation of supplies received in this country—either direct or indirect embargo, and the lack of carriers for freight transportation. Advances of from two to five cents per pound are to be noted in the present prices throughout the crude spice list over those prevailing at the outset of the war.

In the group of waxes some recessions instead of advances have occurred as the leading consuming markets of Europe have cause to draw upon the available supply to the extent normally registered. This has been particularly true in the list of Brazil waxes, known as canaubas, where declines of from two to four cents have occurred in all grades except that known as flor. Bayberry and beeswaxes have shown similar conditions, and for similar causes. On the other hand, ozokerite and its refined product known as ceresin, together with montan and the Mexican vegetable wax known as candellila have had phenomenally sharp advances, as supplies have been cut off.

Paraffine has soared as the foreign supply has been eliminated, and the American petroleum product manufacturers have experienced great difficulty in meeting the demand for export consumption. The petroleum market conditions both as regards export and domestic consumption have been reflected in the paraffine market.

The most sensational advances in the list of seeds have been noted in caraway, celery seeds and Levant wormseed. Because of greatly curtailed shipping facilities, the incoming amounts have been greatly diminished within the past two years. Caraway has been advanced from 8 cents a pound to above 27 cents, while celery has moved upward from 17½ to close to 30 cents. Levant wormseed has risen from 36 cents to $1. Cardamoms was the notable exception in the seeds list, as it registered a decline from $1.30 to 85 cents for bleached, and from $1.15 to 68 cents for decorticated.

National Paint, Oil and Varnish Association Convention.

The twenty-ninth annual convention of the National Paint, Oil and Varnish Association at Atlantic City, which opens Monday next, October 9th, promises to be of unusual interest and value. The convention will open with the largest membership registered in the Association since its organization, an increase brought about despite the fact that the dues were doubled to finance the permanent offices of the Association in this city. Two new clubs have been organized and their delegates for the first time will be present at the Atlantic City gathering in an official capacity.

The past year has been one of accomplishment for the N. P., O. and V. A. Its officers and committees have labored successfully and with increasing enthusiasm as the results of their efforts became more generally apparent, and the trips throughout the country by Secretary Horgan in the interest of new membership and the better understanding of trade conditions have been of marked effect in achieving the results attained. While it is but eight months since the permanent secretary undertook the executive detail work of the Association—since February 1, 1916—and established offices in New York, the results obtained have been such as to more than prove the wisdom of the innovation. There is an increased feeling of satisfaction, of loyalty to the Association, and of renewed interest in the work of that body for the general advancement of the trade that augurs well for the achievements of the coming year, and for the helpful character of the sessions at Atlantic City next week.

The Trade Names Bureau, the "Dutch Treat Clubs," with their inspiration of good-fellowship among local paint men in the larger cities, the monthly letters of President Cheesman, the constant touch of Secretary Horgan with the subjects of importance to the members of the N. P., O. and V. A.—all these have contributed to the successful record of the year just closing. And, while the coming convention will have "Business, More Business and Better Business" as its keynote, it will also be more or less in the nature of a celebration of the new era upon which the Association has so successfully embarked.

As is customary, a complete detailed report of the proceedings of the convention will be printed in an extra edition of the Oil, Paint and Drug Reporter, to be published following the adjournment of the final session.

OBITUARY.

COL. JOHN B. PURCELL.

John Barry Purcell, one of the best-known and best-loved men in Richmond, Virginia, a veteran of the Civil War, which he entered as a schoolboy in July, 1864, a former president of the National Wholesale Druggists' Association, having been chosen to that office at the Philadelphia meeting in October, 1896, is dead at the age of 67.

Colonel Purcell was born in Richmond, September 17, 1849. Enlisting in the Confederate service in 1864, at the conclusion of the war he entered the Virginia Military Institute, from which he was graduated in July, 1868. Immediately following his graduation he became connected with the firm of Purcell, Ladd & Co., which was established by his father in 1840, and in 1872 he was admitted to the firm.

His title of colonel was gained by his election to the command of the First Regiment, Virginia Volunteers, in 1878, and his appointment by the governor as a military visitor to the military institute of which he was an alumnus. Active in civic and military affairs in his home city, several times president of the Chamber of Commerce of that city, and a director in banks and financial bodies, his record of citizenship is a fine one.

In speaking of Colonel Purcell, the Richmond News-Leader of September 25 said editorially:

Colonel John B. Purcell served faithfully wherever duty called him. As a boy soldier in the Confederate army he was ever at his post, an example of readiness to do and to dare and to obey. In the days of storm and stress and wreck following the war, Colonel Purcell was a leader among the young men in rebuilding the city materially and socially. In association with his father and uncle in one of our largest wholesale houses, he was a pioneer in re-establishing Richmond's outside trade and in rehabilitating old concerns both within and without the city. And when he turned his attention more distinctly to finance, he became potent in developing Richmond's banking interests and making the city the great and influential banking center she now is.

Public office Colonel Purcell never sought, and though frequent efforts were made to thrust it upon him, he always declined. Business positions such as the presidency of the Chamber of Commerce, membership of advisory

committees for the forwarding of commercial and financial and legislative movements for Richmond's advancement sought him, however, and he was ever ready to serve at any personal sacrifice.

Colonel Purcell's civic pride was only equaled by his reverence for all things associated with the Confederate cause. Few men in the community had done more to keep the memory of that cause alive and to aid and cheer the sufferers from devotion to it.

In the death of Colonel Purcell a pillar of good, loyal and progressive citizenship has fallen.

JOHN P. SEWARD.

John P. Seward, assistant treasurer of the Priarie Pipe Line Company, died suddenly recently from acute indigestion.

More than a quarter of a century ago he became connected with the Standard Oil Company at Bradford, Pa., where he was connected with the Buckeye Pipe Line in August, 1904, joined the Priarie Oil and Gas force in this city, where he had resided for most of the time since. When the Prairie Pipe Line Company was organized he was elected assistant treasurer.

He was born at Titusville, Pa., May 25, 1872.

MAJOR WM. G. RAMSAY.

Major William G. Ramsay, vice-president and director of the du Pont Powder Company, and chief engineer of its construction department, died last Thursday, after a brief illness, of pneumonia. He was the principal factor in the physical development of the du Pont plants, caused by the extraordinary demands put upon the company by the European war. Major Ramsay built many explosive factories throughout the country, and recently was engaged in the construction of a plant in Montana, which will be named Ramsay, in his memory. He was born at the Presidio, San Francisco, in 1866. He was a Federal inspector at New Orleans, and later was with the Pennsylvania, Baltimore & Ohio, and Cheasapeake & Ohio railroads.

John McElhinney, 70, an oil driller in Pensylvania from the early days of Oil Creek until two years ago, died last week. During the operations on Oil Creek he became a driller, and followed that occupation in the Bradford, McDonald, Cranberry and Butler fields and finally went to West Virginia, where he remained until two years ago, when he went to Calineville and settled on a large farm.

Prairie Pipeline Company Makes Joint Tariff.

Washington, Sept. 29, 1916.

The Prairie Pipeline Company has announced a joint tariff with the Illinois, Tide Water and Northern Pipeline companies and the New York Transit Company of 70 cents per barrel from Humboldt, Argo, Cobb, Bartlesville, Creek, Manuel, Indian, Crerokee, and Captain Creek stations to Bayonne, N. J. In addition the oil tendered for shipment in Kansas and Oklahoma, accessible to the gathering lines of this company will be subject to a further gathering charge of 12 cents per barrel. Effective September 25, 1916.

Public Hearing on Standards for Spices to Be Held in New York, Oct. 16.

Washington, Sept. 29, 1916.

A public hearing on definitions and standards for spices will be held in New York, on October 16, 1916, by the Joint Committee on Definitions and Standards representing the United States Department of Agriculture, the Association of Official Agricultural Chemists, and the Association of American Dairy, Food and Drug Officials. All persons interested are invited to attend. Those who desire may present their views in writing to the secretary of the committee, Bureau of Chemistry Building, Washington, D. C., on or before the date set for the hearing. It is desired by the committee to obtain all possible information from the trade and others on the question of definitions and standards. The hearing will be held at 10 a. m., on October 16, 1916, in the office of the United States Food and Drug Inspection Laboratory, room 1012, Appraiser's Stores, Christopher and Washington streets, New York, N. Y.

Spirit Imports Must Be Certified or Else Will Be Excluded by United States.

Washington, Sept. 29, 1916.

American importers of spirits from Great Britain were notified today by the Department of Agriculture that, after December 1, shipments offered for entry to this country will be refused admission unless accompanied by a certificate from British excise authorities that the goods meet the requirements of the English immature spirits restriction act of 1915. This act provides that no British or foreign spirits shall be delivered for home consumption unless they have been warehoused for a period of at least three years.

The new regulations, authority for which is given by the pure food and drug act, make an exception of spirits imported from Geneva, perfumed spirits, foreign liquors and spirits intended for use by scientists, manufacturing chemists and perfumers.

Arrangements for granting of certificates resulted from negotiations between the State Department and the British Foreign Office.

TRADE AND NEWS ITEMS

The American Independent Oil Company of Indiana has increased its capital from $200,000 to $1,000,000.

The American White Cross Laboratories, Inc., of New York, has increased its capital from $5,000 to $50,000.

The eight-stand cotton gin of the Texas Cooking Oil Company, at Burlington, Tex., has been burned, with a loss of $18,000.

The Ethical Drug Stores Corporation, of Dover, Del., capital $250,000, has been authorized to do busines under the laws of New York.

The Planters' Cotton Oil Company, Pine Bluff, Ark., has been organized, with $125,000 capital, by L. M. Andrews, D. B. Niven and T. H. Gregory.

The Intravenous Products Company has purchased property in Denver, Colo., on which a chemical plant, costing about $70,000, is to be erected.

The Best Products Company, Inc., of Cleveland, manufacturer of paints, etc., has been authorized to conduct its business under the laws of New York.

L. G. Ryan, managing director of the Mallinckrodt Works of Canada, made a visit to the New York branch of the Mallinckrodt Chemical Works last week.

The Contact Process Company, Buffalo, N. Y., chemical manufacturers, is now erecting a building for the manufacture of sulphide of soda and hyposulphite of soda.

The American Petroleum Company, Houston, Texas, has commenced grading for its new oil refinery. The company was organized last March with a capital of $1,500,000.

Gustav Schwab and William H. Dodds, of the Michigan Drug Company, of Detroit, visited numerous friends in the New York wholesale drug trade at the close of last week.

The Virginia-Carolina Chemical Company has declared the regular quarterly dividend of 2 per cent. on the preferred stock, payable October 15, to stock of record September 30.

The American Oil Export Company, petroleum products, etc., has been incorporated under the laws of New York, with $100,000 capital, by G. W. Geiling, F. H. Stokes and J. J. Thornley.

The W. Beckers Aniline and Chemical Works will erect a building on the southeast corner of Ditmas avenue and East Eighty-thrid street, Brooklyn. The building will be used for the manufacture of azo dyes.

E. L. Cannon, president of the Warren Refining and Chemical Company, Cleveland, Ohio, spent a few days in New York last week on his way home from the convention of the National Petroleum Association.

W. T. Rightor, formerly sales manager for the San Antonio Drug Company, of San Antonio, Texas, has taken a similar position with H. Gamse & Brother, manufacturers of druggists' boxes and labels, in Baltimore.

At a meeting of the directors of the Seaboard National Bank, held last week, E. J. Cornish, president of the National Lead Company, was elected a director to fill the vacancy caused by the death of W. W. Lawrence.

Frank Happel, formerly president of the Kentucky Paint Manufacturing Company, and William DeForester, a resident of Louisville, have organized the Happel Paint Company, and are installing a plant at Eighth and Grayson streets.

The Fisheries Products Company, of Wilmington, N. C., a $125,000 corporation, is reported to have leased the plant of the Carolina Fish and Oil Company, on the Cape Fear River. The plant has a capacity for handling 5,000 barrels of fish.

The Buttercup Oil and Car Company, of Louisville, recently incorporated to do a tank car and other cotton oil business, has filed amended articles, giving the company the right to engage in the business of handling and storing oil and operating warehouses.

William Stridiron, who died at his home in Detroit on September 18, was one of the best-known varnish men in the country. For almost half a century he represented Berry Bros., but he retired from active work a few years ago because of advancing years. Mr. Stridiron was 85 years old at the time of his death.

The next regular meeting of the Board of Governors of the Insecticide and Disinfectant Manufacturers' Association will be held at the office of Secretary Benjamin M. Kaye, 192 Broadway, New York city, October 3, at 3 p. m. This is the first meeting since June and a number of important matters will be taken up, primarily the Wadsworth bill, now pending for Congressional action, the extension of membership and the consideration of plans for the next annual meeting in December.

The Cuban Potash Corporation has been organized at Dover, Del., with $5,000,000 capital stock, to acquire, own and develop lands containing potash and deal in fertilizers. The incorporators are Thomas C. Meadows, Irving E. Burdick and Theodore B. Heller.

The Owensboro Paint and Glass Company, Owensboro, Ky., and the Public Drug Company were among two concerns dismissed at examining trials in the Circuit Court on charges of violating the statute in failing to use the word "incorporated" in connection with their advertising.

Big developments are being planned by the Goodwater Graphite Company, of Goodwater, Ala., incorporated with $100,000 capital to develop graphite holdings in Coosa and adjoining counties. The incorporators include W. L. Shumate, Jr., T. D. Epps, J. R. Maloney and Eugene Argo.

The menhaden fishing steamer Menhaden, belonging to the Dennis Fish and Oil Company, of Cape Charles, Va., caught fire on last Thursday morning, and was damaged to the extent of $2,000, partly covered by insurance. The vessel was at Sharptown, Md., for repairs at the time.

The recently incorporated Melick Refining Company has practically decided to locate its new plant at Lexington, Ky. David L. Melick, president, states that the company is planning a plant to cost in the neighborhood of $2,500,000, employing 800 men, and with a capacity of 5,000 barrels per day.

The North Fork Oil Company, of Franklin, W. Va., which has been incorporated with a capital of $50,000, will sink test wells for oil in that county. John A. Nelson is president of the corporation, and has spent nearly twenty years in the oil fields of Texas. Riverton will be the headquarters for the operations.

The Standard Guano Company, Continental Building, Baltimore, has let a contract for the erection of an acid phosphate plant at Curtis Bay, to have a capacity of 350,000 tons a year. The buildings are to be of steel and reinforced concrete. The Chemical Construction Company, of Charlotte, N. C., has the contract.

A syndicate has offered to purchase the $4,000,000 bonds of the General Pipe Line Company, of California, together with the participation certificates, representing $200,000, the purchase price of Class A stock. The syndicate representing the General Pipe Line bonds cossists of Drexel & Co., C. D. Barney & Co., Tucker, Anthony & Co. and James B. Colgate & Co.

Substantial increases in wages have been decided upon for workers in the hand window glass factories at a conference held at Cleveland, Ohio, between the wage committee of the National Window Glass Workers' Association and representatives of the factories. The new scale will affect approximately 5,000 men in Pennsylvania, Ohio, Kansas, Oklahoma and Indiana.

Attorney C. H. Ruhl, for the A. Wilhelm Paint Company, Reading, Pa., has filed an equity suit against J. H. Hindle, to have the defendant restrained from selling or otherwise disposing of certain color formulas which he has in his possession. Mr. Hindle has been foreman of the color department of the company. Judge Endlich granted a preliminary injunction.

On petition of three creditors whose claims aggregate $1,400, the Chesapeake Glass Company, of Baltimore, was adjudged a bankrupt in the United States Court there last Thursday, and George W. Manly was appointed receiver, under a bond of $6,000. J. William Strobel and Henry W. Brown, composing the defendant company, admitted its insolvency. The company has been operated for a number of years.

All-year car show week seems to have opened very successfully in all parts of the country, according to advices received by KisselKar representatives in this city. The following message from the Kissel factory tells the story:—"Telegrams from most of the important points from New York to San Francisco report very large attendance, and the greatest interest on opening day of all-year car show week. New models highly praised everywhere and every indication of record-breaking sales."

The American Can Company has again advanced prices, this time about 12 per cent. This is the fourth advance this year, and can prices are now at the highest levels which have prevailed for eight years, due largely to the higher cost of tin plate. The Nos. 1, 2 and 3 sizes of sanitary cans, which are used principally for canning of fruits and vegetables for home use, are now selling at $14.50, $20.50 and $26 per thousand, respectively. The No. 10 can, which is used largely for packing apples, tomatoes, etc., for hotel use, is selling at $4 per thousand over the last quotation.

Charles D. Wettach has been elected president of W. W. Lawrence & Co., to fill the vacancy caused by the death of W. W. Lawrence. Charles McKnight, president of the Western National Bank, of Pittsburgh, has been elected vice-president.

W. L. Whitehouse, Scranton, Pa., receiver for the Barium Products Company, has filed his fir-t account as receiver. The plant of the company was destroyed by fire in February, 1915, and all the insurance money went to the bondholders under the terms of the mortgage. Subsequently the land was sold by the sheriff for the benefit of the bondholders and none of the proceeds passed through the hands of the receiver.

"Clean Up Rubbish!" will be the slogan of Fire Prevention Day, October 9. Fire Commissioner Robert Adamson, of New York, has enlisted aid of civic organizations, firms and corporations to make the day an object lesson to the city. Seven floats, showing fire dangers, and emphasizing the carelessness of citizens toward such hazard, will be part of the fire prevention parade.

One of the oldest and best producing properties in the old Hickory oil field, Forest county, Pa., changed hands last week, Messrs. William H. Roberts and E. E. Arrowsmith, of Pittsburgh, having closed a deal for the purchase of the holdings of George H. Lowe, of Jamestown, N. Y., the property being that known to oil men as the Dawson Run Oil Company, with about thirty producing wells. A number of these have been continuous producers for the past thirty years.

The reorganization of the United Dyewood Company, of Portland, Me., a $10,000,000 corporation, has been effected by the formation of the United Dyewood Corporation, of Dover, Del. The new company has been incorporated, with a capital of $20,000,000, by Harrison Tweed, Welton C. Percy and W. F. Cahill, all of New York. The business was described as to engage in the "manufacture of chemicals, colors, coloring matter and dyestuffs; to purchase, sell and deal in these products, and to promote research tending to improve the processes of manufacturing dyewood extract."

If you have surplus stocks of chemicals, dyestuffs, oils, paints or fertilizer materials you wish to dispose of, or if you wish to make purchases in these lines, we would suggest that you consult the Classified Business Opportunities on pages 2 and 3 of the weekly issues of the Reporter. Advertisements are inserted under this heading, without display, at the rate of $2 per insertion, 48 words or less. In excess of 48 words a charge of 25 cents is made for each additional six words. Rates for display advertisements will be furnished upon application to Oil, Paint and Drug Reporter, 100 William street, New York city.

In its desire to branch out in general lines of industry, especially in view of the fact that a large part of its explosive manufacturing plant will be useless after the war in Europe, E. I. du Pont de Nemours & Co. have found that the artificial leather branch of their business, started as an experiment, has assumed major proportions, with fine prospects. The manufacture of artificial leather, known as fabrikoid, is carried on by the Du Pont company at two plants, one at Newburgh, N. Y., and the other at Toronto, Canada. The Du Pont company has recently purchased the Fairfield Rubber Company, at Fairfield, Conn. This company manufactures a coated textile similar to fabrikoid.

The directors of the Texas Company have recommended a 25 per cent. increase in the capital stock to stockholders, and the proposal will be voted upon at the annual meeting to be held November 14. This increase will bring the capitalization of the company up to $55,500,000. The new stock is to be offered at par to stockholders of record November 30, payments to be made in two installments, one on or before January 5, 1917, and the other by April 5, 1917. The payments will bear interest at 6 per cent. from January 5 to April 1. Dividends will not accrue on the new stock until April 1. Proceeds of sale of new stock, as heretofore, are to be applied solely to extension of plants and other facilities to take care of the continued growth of business.

(For other Trade Items, see Table of Contents on page 11.)

Navy Department to Advertise for Six Months' Supply of Gasoline.

Washington, Sept. 29, 1916.

Between November 15th and December 1, the Navy Department will advertise for bids for a six months' supply of gasoline for naval stations and navy yards on the Atlantic Coast. It is estimated that the total quantity of gasoline required will be 200,000 gallons. About the same time the department will advertise for a supply of gasoline for the Pacific Coast stations and yards which will require about 50,000 gallons.

DIRECTOR PRINTING BUREAU TELLS HOW HE TRIED TO GET DYES HERE

Stands Ready to Purchase Made in America Colors, and Believes American Chemists Can Produce Them if They Would.

Washington, Sept. 29, 1916.

Director Joseph E. Ralph, of the Bureau of Engraving and Printing, read with interest the editorial advocating the purchase in the open market of colors for the bureau as published in the Oil, Paint and Drug Reporter last week. Mr. Ralph declared that he was in sympathy with the idea of purchasing dyes for his bureau from American manufacturers, but declared that it had been impossible for him to obtain such supplies, although he had frequently during the last two years made every effort to get them.

Mr. Ralph made clear the fact that his purchase of German dyes was made only because he knew of no other place to purchase them, and he regarded his latest contract to obtain such dyes from Germany of advantage to consumers in this country, especially in the case of reds, which he said are so limited in quantity and insufficient for the demand, that by obtaining his supplies from abroad he elimintes the bureau from the market and permits other users of these articles to have a better chance to obtain them.

"Because I did not go into the market strongly for dyes that came over on the Deutschland, permitted the use of those dyes in the ordinary channels of trade, where they have been sorely needed," he added.

Seeking Dyes Vainly in this Country.

Mr. Ralph has declared that he is not only willing to purchase dyes made by American manufacturers, but he has been making constant effort to get colors, and today would buy large quantities of reds if he could get them. As an instance of his inability to obtain these colors, Mr. Ralph referred to the following list of dealers in dry colors, to all of whom he has made frequent appeals for colors during the last two years and from any of whom he would gladly make a purchase at any time:—

Binney & Smith Company, 81 Fulton street, New York; Harrison Bros. & Co., Thirty-fifth street and Grey's Ferry road, New York; John T. Lewis & Bros. Co., 706 Lafayette Bldg., Philadelphia, Pa.; Siemon & Elting, 93 Nassau street, New York; A. Wilhelm Company, Reading, Pa.; H. Kohnstamm & Co., Rosebank, Staten Island, New York; Berger & Wirth, 58 Columbia Heights, Brooklyn, New York; Morris Herrman & Co., 200 Fifth avenue, New York; Ault & Wiborg Company, 57 Green street, New York; A. B. Ansbacher & Co., 527 Fifth avenue, New York; Pfeiffer Color Company, 100 William street, New York; Feliz Fezandie,, 205 Fulton street, New York; J. M. Huber, 239 Front street, New York.

Believes There Is Not 1,000 Pounds of Suitable Reds Here.

"I do not believe there are 1,000 pounds of reds in the United States that we could use," said Mr. Ralph, in commenting on the scarcity of the colors he is endeavoring to get.

"The only color we are certain of here is black. We make our greens by mixing blue and yellow, and I am buying all the yellow I want in America, as well as all blacks we use. I do not think I could buy one thousand pounds of reds in America today by paying $3 a pound for it."

Mr. Ralph then took from his window sill two bottles filled with reds, one a German color for which he had paid 35 cents per pound and the other purchased in the open market in this country for $2 per pound, which upon being tested proved to be only 25 per cent. of the strength of the 35-cent German reds. So that, in proportion in strength of the articles obtained, the American product had cost $8 per pound against 35 cents for the German product.

In the Market for American Dry Colors.

"I wish to say to the color manufacturers in America today that if they can furinsh me with dry colors satisfactory to our work, I am in the market for their product. I would not even hold them up to the standard of the German product and would not hesitate to buy at a price very much in excess of what we pay for the German product, because although we have stock on hand sufficient to last, say six months, I will be glad to lay in additional stock against future needs.

"I have not had a single man offer me a pound of red for seven months, and when I receive that offer I will buy what he has.

"As it now stands, if I had to depend upon the American market for colors I would either have to shut down or use a substitute, and that substitute would be black, because I cannot get the reds. We are not only in the market for reds, but also for prussian blue."

Believes It Can Be Produced Here.

Mr. Ralph also expressed his belief that American chemists could produce every pound of color used in the Bureau of Engraving and Printing, and the fact that they are not producing it, he believes, results from their opportunity to make more money in supplying the cheaper colors to the textile trades. He feels confident that they have the ability and access to raw materials necessary for this work.

What the Bureau Requires.

The requirements of the bureau may be judged by the following specifications issued March 9, 1914:—

Prussian Blue—Must be an iron prussiate, free from adulterants and by-products, and must be not inferior in softness, fineness and physical and working qualities to specimen sent bidder. (See general specifications, paragraph 12.)

Bronze Blue—Must be an iron prussiate, free from adulterants and by-products, and must be not inferior in softness, fineness and physical and working qualities to specimen sent bidded; other factors being equal, the color having the highest degree of bronze effect and suitability for typographic printing when ground in varnish, will be preferred. (See general specifications, paragraph 12.)

Red Lake No. 1—Should be a red lake with medium red overtone and crimson undertone; must be equal or superior to specimen sent bidder in brilliancy and must equal or surpass it in resistance to the action of light and atmospheric influences; when ground in plate oil it must possess the same physical properties as the specimen, and must be practically free from coloring matter soluble in oil or water. (See general specifications, paragraphs 12 and 19.)

Red Lake No. 6—Should be a red lake with a metallic pigment base having the general overtone and undertone characteristic of vermilion; must be equal or superior to specimen sent bidder in brilliancy and must equal or surpass it in resistance to the action of light and atmospheric influences; when ground in plate oil, it should possess the same physical properties as the specimen, and must be practically free from coloring matter soluble in oil or water. (See general specifications, paragraphs 12 and 19.)

What the Specifications Call For.

Specification paragraphs 12 and 19 referred to above follow:—

12. Samples of colors, to be accepted, shall closely match the specimen herewith forwarded in both overtone and undertone and in strength of color, and must be equal or superior to it in all other respects, and after acceptance of bid the same requirement will be strictly enforced with regard to material delivered under contract, the sample of the accepted bidder then becoming the standard. It is particularly desired that samples having a greater strength of color shall not be submitted, as no special weight will be given to an excess of color strength in the rating of the samples.

19. Where the specifications require that a color shall contain the least possible coloring matter soluble in water, the degree of bleeding will be determined by the coloration of the filtrate from one gram of the color in 100 c.c. of water after thorough shaking, standing, and filtering for removal of suspended matter.

Experimental Dye Laboratory.

The most interesting feature of the dye situation as it exists in the Bureau of Engraving and Printing today was developed by Director Ralph when he made public for the first time the plan that is to be pursued by the Bureau of Chemistry, of which Carl L. Alsberg is chief, in its establishment of an experimental dye laboratory for which Congress appropriated $50,000. Director Ralph has arranged with Dr. Alsberg to give a practical test to all the colors produced by this laboratory.

Some means for practically trying out the products of the laboratory was at once seen would be essential to its work, and this will be supplied by the bureau and if preliminary tests are satisfactory they will be extended so that American money, postage stamps and other products of the bureau may in the near future be brought out at least in part by the use of dyes made in this experimental laboratory.

When Dr. Alsberg was seen by your correspondent he wished it made very clear that this chemical laboratory to experiment in the making of dyes is not to be considered as in the same class with the armor plate plant for which Congress appropriated $11,000,000 for the manufacture of armor plate for vessels of the navy. It is essentially an experimental plant.

Location Decided Upon..

Dr. Alsberg has gone so far with his plans as to determine upon the location of this plant, which will be on the government's property in Virginia just across the Potomac River from Washington. The Bureau of Chemistry has completed a series of experiments in respect to products, such as starch, etc., obtained from potatoes so that the work of that kind will now be transferred to the field in various localities. This potato plant furnishes in a very satisfactory way many of the requirements for the dye plant which will be housed in the same buildings and will use the same power, etc.

In these experiments Dr. Alsberg will endeavor to develop the most reliable methods for the manufacture of dyes which will be opened to all manufacturers in the United States. By the experiments that will be made under his direction manufacturing chemists will be saved the expense and labor of trying out different methods and will be able to start in where the Bureau of Chemistry leaves off. So that not only can such manufacturing chemists have the advantage of the best methods that can be developed here for supplying the government, but for supplying the trade generally.

While there is no intention to have this plant in any sense compete with private manufacturers, it is still the purpose of Director Ralph, in case he finds the same difficulty in the future as in the past two years in obtaining these colors, to go to Congress and ask an appropriation for a sufficient dye plant to permanently supply his bureau with the colors it needs, that plant to be established upon the most approved methods that may be developed by the Bureau of Chemistry. The statement of this fact is now publicly made the first time.

Development of Exclusive Color.

Director Ralph also has another project in mind which he hopes may be realized through the experimental work of the Bureau of Chemistry. It is to develop an exclusive color for the use of the government in the printing of its securities, which in respect to color will be similar to the distinctive paper now used by the government in making its paper money. Such a distinctive color may be obtained, Mr. Ralph hopes, through a secret process by which it would be impossible for private enterprises to imitate unless they should accidently stumble across the method of its making, but he would further protect such distinctive color by recommending the passage of a law which would prevent its manufacture or use just as law prevents the use by private persons of distinctive paper upon which government securities are printed.

While these experiments are going on, Director Ralph wishes to spread broadcast the fact that he is now in the market for colors needed in the bureau and would be glad to hear from any one who has such colors for sale.

SECRETARY OF COMMERCE HOLDS UP DYE CENSUS PROOFS AFTER GERMAN PROTESTS

Secretary of Commerce Redfield on Thursday ordered the proof sheets of the census on dyestuffs compiled by the Bureau of Foreign and Domestic Commerce withdrawn from public inspection. They had been a feature of the dyestuffs program of the American Chemical Society convention and were used as the basis of Dr. Norton's address. Secretary Redfield's action was taken after weighing the protests sent to him by New York importers of German dyestuffs and by German manufacturers, who insisted that the tables carried in the census report on dyestuffs revealed important business secrets.

The matter had been put up to the Solicitor of the Department of Commerce in the first instance, and while no announcement has been made at the department, it is understood that he held the department had a legal right to publish the information contained in the census as compiled, all the facts having been taken from the customs offices of the United States. It is believed, however, that the Secretary ordered the withdrawal of the proof sheets from public inspection, which probably will be followed by a modification of the census report, as a matter of policy.

However, when the American manufacturers of dyestuffs take the matter up with the Secretary, should they insist that the information contained in the census to which the importers and German manufacturers are now objecting be retained he may reverse his decision in the matter, it is said.

American chemists are protesting in no uncertain terms against the withdrawal of the data and dyemakers are to appear in force at a hearing soon to be given in Washington.

Telegrams of Protest.

A telegram sent by the Badische Company, 128 Duane street, New York, which is said to have had much to do with influencing the Secretary to order the proof sheets withdrawn from public inspection, reads as follows:—

We respectfully protest against the publication in the census of dyestuffs compiled by Dr. Thomas H. Norton of the detailed and confidential facts of our business. Our documents filed in the custom house have always been considered confidential. See article 1184, Treasury Regulations, of 1915. All legitimate purposes of the census would be accomplished by grouping together the dyes of all the different importers in the United States and giving them total values and quantities. Pending consideration we request immediate withdrawal from public inspection of the proofs at Grand Central Palace, New York. This company is a New York corporation and all the stock is owned by American citizens, residents of the United States.

A telegram of Herman A. Metz, sent to Secretary Redfield, read:—

By what authority does Dr. Norton quote in detail amounts of various products and prices paid for same by importers of dyestuffs? Is not this making public private information obtained from the custom house records unlawful?

Attorney Hardy, on behalf of the Republic Trading Corporation, representing the collective German color importing interests, sent this protest:—

May I ask to be informed whether your official consent to this publication has been secured? If your permission has not yet been secured, I respectfully request that your permission be withheld until the houses I represent have had an opportunity to be heard.

American Makers Demand Information.

Dr. William Becker, chairman of the board of directors of the W. Becker's Aniline and Chemical Works, Brooklyn, whose concern has just completed a plant covering forty acres in South Brooklyn at a cost of several million dollars, said the action of the German interests was resented.

"It is absolutely essential," said Dr. Becker last night, "that the factors engaged in building up the domestic dyestuff and chemical industry have access to the information gathered by Dr. Norton. Millions of dollars have been put into dyestuff and allied plants in this country since the start of the European war. It is now desired to make a survey of the different kinds of dyes actually imported and consumed in America, in order to form a basis for a properly-proportioned industry here."

J. A. Schoellkopf, Jr., of the Schoellkopf Aniline and Chemical Works, the largest color plant in America, with factories in Buffalo, will also file a protest against allowing the German interests to interfere with the publication of the dyestuffs census in its original form. It also was said that the Council of the American Chemical Society would probably come to the aid of the domestic color manufacturers.

After consultation with Dr. Norton, the compiler of the dyestuff census, a statement was drawn up at the exposition, which it was said represented the views of American manufacturers, urging the necessity for the publication of the census wholly unabridged.

"The protests against the publication of the dye census are aimed to prevent the establishment of an Aemrican dyes industry," said Dr. Norton yesterday. "The companies may be American, but they stand for German interests. There is no law which prevents the publication of such information from the customs records as shall not be injurious to American manufacturers."

Without them the census would lose all claim to technical and commercial accuracy.

"Without them any intelligent, experienced tinctorial chemist could work out the manufacturing sources of the great mass of the dyes enumerated in our compilation. It would, however, be a job of many days or weeks for each possessor of a copy desirous of having it in shape to furnish complete information at a glance.

The practical value of this compilation is vastly heightened by the presence of these symbols in the case of the dyer. All makers of colors provide expensive manuals of directions for using all colors of their own make. Our census tells any dyer just what manuals he can conveniently employ in connection with every color designation to be found in current American trade.

For the past three days there have been bitter expressions here in New York in regard to the census on the part of those identified with German importing interests. They are intensely anxious to have it suppressed or emasculated that its complete and easy use can be restricted to the utmost degree. They have threatened to use every effort to have the relation of foreign manufacturer to imported products removed from the work. The claim is advanced that there is no legal status for the publication of such data. They, of course, forget that it is a regular practice to allow the publication in American trade journals of the names of consigners or recipients along with quantities, etc., of our current imports and exports. The use of the statistical data afforded by the invoice of foreign goods is limited only by the degree to which public interest may be obviously subserved and clerical assistance may be available.

The symbols of manufacturers constitute integral parts of trade designations. Their omission would seriously impair the practical value of the census without preventing private initiative from carrying out the identification of given wares at a considerable outlay of time and effort.

The census removes from the anatomy of the dyestuff industry all matters concealing its material parts and their correlation and interrelation, just as the surgeon's scalpel removes the flesh from a skeleton. The method adopted and that of the surgeon leave the skeleton intact with connecting ligaments.

Our German friends are most anxious that the results of the census should resemble a confused mass of bones—deprived of those descriptive labels—the symbols of the manufacturers concerned—which reduce to a minimum the task of comprehending the essential secrets and complexities of the industry.

Why American Dyemakers Protest Cutting Essential Details from Dye Census.

Washington, Sept. 29, 1916.

The views of the American dye industry in respect to the publication in full of the dye census prepared by Dr. Thomas H. Norton, of the Bureau of Foreign and Domestic Commerce are shown in a letter received from a confidential source by the bureau today. This letter is from an eminent authority on the dyestuffs industry and will be given careful attention at the hands of the Secretary of Commerce:—

The custom of the dye trade in this connection is somewhat peculiar and is based upon the inherent characteristics of the color industry. The only branch accustomed, to any extent, to use manufacturers names or symbols in the differentiation of current products is that of pharmaceutical chemistry.

Many dyestuffs appear under different designations or under the same designation under varying marks. It is the practice in the literature and in the trade in colors to append to distinguishing brands, or marks in brackets, the symbols in current use to represent the several makers.

A given color might be handled in trade under the name of Varine F F and be manufactured by two firms. Of essentially the same chemical composition, the two brands are, however, clearly distinguishable by certain physical characteristics of more or less importance in connection with dyeing operations. If the "Badische" or "Sandoz" make the same brand, it is customary to append in brackets the symbol of the maker, as:—"Varine F F (B)" or "Varine F F (S)." The symbols of the makers thus become an integral part of the current trade designation.

Bids for Kerosene and Gasoline for Panama Canal Opened.

Bids were received by the general purchasing officer of the Panama Canal, Washington, D. C., September 23 for furnishing under circular 1079 kerosene and gasoline, as follows:—

Bidder 1, P. J. Constant, 277 Broadway, New York city; bid for Pure Oil Company's regular 150 deg. W. W. oil.

2. Texas Co., New York city.

3. West India Oil Co., 26 Broadway, New York city.

Class 1. 266,000 gls. kerosene—Bidder 1, 17.93c., alt., 45 days; 2, 14.93c., Baume of 44.5, or 12.19c. for 5-gal. cans in new medium export cases, 30 and 45 days; 3, 12.99c., 30 days.

Class 2. 180,000 gls. gasoline—Bidder 8, 24.90c., f. o. b. New York city, shipped in 55-gal. galvanized steel drums, $7 each, New York, 15 days.

X.—WAR-TIME MARKET PRICE STUDIES, FROM AUGUST, 1914, TO OCTOBER, 1916

DRUG MARKET—IV.

The Reporter presents herewith in tabular form the record of prices of seeds, spices and waxes, in the New York markets, for the first of the month of each quarter of the fiscal years covered, beginning with the opening of the European war, and bringing the quotations up to September 30, inclusive, of this year. The eleventh comparison—covering *fifth section of the drug market, the first half of the miscellaneous list*—will appear in the Reporter of October 9.

SEEDS, SPICES AND WAXES.

	1916 Oct.	1916 July.	1916 April.	1916 Jan.	1915 Oct.	1915 July.	1915 April.	1915 Jan.	1914. Aug.
Anise, Spanish, lb.	16¼@16½	13½@14	14¼@14⅝	12⅝@13½	11½@12	12@13	12¼@12¾	11¼@12	10@10½
Star, actual weight	22@24	24½@25	25½@26½	*27@30	24@25	20½@21	20½@21	20½@21	19⅛@19⅝
Levant	12½@13	12¼@13	12½@13	11@11½	11@11½	11@11½	10⅝@11½	—@—	*—@—
Italian	14@15	—@—	—@—	—@—	—@—	—@—	—@—	—@—	12@12½
Canary, Spanish	5¼@5½	5⅜@6¼	5¾@7	5½@5⅝	5½@5⅝	6¼@6½	6½@7	6½@7	—@—
Smyrna	7@—	*7@—	*7@—	5⅜@7	5⅜@7	6¼@6⅝	7@7½	7½@8	6@6½
South American	4@4¼	4½@5	5½@6	4⅝@5¼	4⅜@5¼	4¾@5	6@6½	6½@7	6@6½
Dutch	5@5½	5@5½	5¼@5½	4½@5	6@6½	5½@6	6¼@6½	6@6½	—@—
Caraway	24½@25½	18¼@18¾	16¼@16½	12¾@13	9¾@10¼	10@10½	9¼@9½	8¾@9¼	8@8½
Cardamoms, bleached	85@1.30	85@1.30	85@1.30	85@1.40	95@1.50	1.20@1.50	1.05@1.50	1.30@1.50	1.30@1.75
decorticated	68@72	68@72	75@80	75@80	85@95	1.15@1.25	1.15@1.25	1.15@1.25	1.15@1.30
Celery	23@25	22@23	34@35	30@31	33@34	16¾@19	18@18½	14@15	17½@18
Colchicum	1.15@1.20	1.05@—	1.05@—	95@1.00	85@1.00	85@1.00	55@60	80@90	20@21
Conium	18@20	18@20	18@20	10@15	10@15	10@15	9@9½	9@9½	9@10
Coriander, natural	8⅝@9	5½@6	6@7	4⅝@4¾	4⅜@5	3½@5⅝	4¼@4½	4@4¼	4¼@5
bleached	10@10½	6½@7	7@7¼	5½@6	5½@6	4½@5	5@5½	4½@5½	5@6
Cumin, Malta	*20@21	*21@24	*23@24	*23@24	nominal	23@24	22¼@23	13¾@14¼	10@11
Mogador	21@22	22½@23	—@—	—@—	20½@21	23@24	—@—	—@—	—@—
Dill	15@16	9@10	8@8½	6½@6¾	6½@6¾	8@9	7¾@8¼	7¼@7¾	7½@8
Fennel, German, large	6@6⅝	7@—	7@—	1.00@—	40@—	35@40	23@30	18@19	10@12
small	20@—	2@—	20@—	16@20	16@20	16@20	12@14	12@14	8@8½
French	12@13	15¼@15¾	14@—	12@13	8@—	8@—	7¾@8	10¼@11	—@—
Roumanian	18@20	18@20	18@20	15@17	15@17	11@12	15@17	15@17	nominal
Flax, whole, bbl.	9.75@10.00	8.75@9.00	8.50@8.75	8.50@8.75	8.25@8.50	8.25@8.50	8.25@8.50	8.25@8.50	10.00@10.25
Fenugreek	4@4¼	4½@5	4@5	3¾@4	3@3¼	3@3½	3@3½	5@6	3@3½
Hemp, Manchurian	6@6¼	4½@5	4¾@5¼	5½@5¾	3¼@3⅜	2¾@3	nominal	nominal	2¼@3
Russian	*6¼@—	*6¼@—	*6¼@—	*5@5½	nominal	3@3¼	3¾@4	3½@4	2½@3
Job's tears, white	6@7	6@7	6@7	6@7	6@7	6@7	6@7	5@6	—@—
Larkspur	20@21	21½@22	25@28	25@28	25@28	28@30	28@30	28@30	25@30
Lobelia	27@28	27@28	22@25	22@25	30@35	30@35	30@35	30@35	25@27
Millet, natural	3.00@3.15	3.20@3.40	3.30@3.50	3.00@3.10	2.90@3.00	2¾@3¼	2¾@3¼	2¾@3¼	1.90@2.20
hulled	6½@7	6¼@7	6¼@7	6½@7	7@7½	8¼@9	9¾@10½	9¾@10¼	4¼@4¾
Mustard, Bari brown	14@14½	15@16	16@17	11½@12	7½@8	8@9	8½@9	8¼@8¾	6@6¼
California, brown	13½@14½	15@16	15@16	12@12½	9½@10	9@9½	10@10¼	8¼@8¾	5@5½
Sicily, brown	13¼@14	15@16	16@16½	12½@13	7¼@7¼	7½@8	10@11	7¾@8½	6¾@6¼
Trieste, brown	—@—	—@—	—@—	—@—	—@—	—@—	—@—	—@—	6@6½
English, yellow	13@14	16½@17	19¼@19¾	13½@14	11½@12	10¼@10¾	11@12	7½@8	6@6¼
Dutch, yellow	14¼@14¾	16@17	19@19½	13¾@13¾	—@—	—@—	—@—	—@—	—@—
Parsley	21@22	21@22	21@22	21@22	21@22	21@22	25@—	25@—	20@21
Poppy, Dutch	27¼@29	28@30	32½@33½	24½@25	13¾@14¼	13½@14	14¼@14¾	13½@14	6¼@6½
India	24@25	20@22	32½@33½	—@—	—@—	—@—	—@—	—@—	—@—
Russian	25@26	—@—	—@—	—@—	—@—	—@—	—@—	—@—	—@—
Pumpkin	11@11½	11@11½	11@11½	11@11½	11@11½	11@11½	11@11½	12@15	12@15
Quince	75@—	75@80	75@80	70@75	70@75	75@80	75@80	65@70	60@70
Rape, English	9@9¼	9@9½	9@9¼	9@9¼	9@9¼	9@9¼	9¼@10	6¾@7¼	5¾@6¼
Bulgarian	8¾@9¼	8¾@9½	8¾@9¼	8¾@9¼	8¾@9¼	—@—	8¾@9¼	—@—	—@—
Japanese	5⅞@6¼	6¼@7	6¼@7	6¼@7	6@6½	—@—	—@—	—@—	—@—
Sabadilla	22@24	22@24	20@21	20@21	19@21	19@21	18@20	23@24	15@16
Staves acre	30@34	45@—	90@—	25@—	25@—	25@—	25@—	25@—	10½@11
Stramonium	10@—	10@—	10@—	10@—	10@—	10@—	10@—	10@—	8@8½
Strophanthus Kombe	2.25@—	nominal	*2.00@2.50	60@—	60@—	60@—	90@—	90@—	40@42
Hispidus	nominal	nominal	*2.00@2.50	50@55	50@55	45@50	45@—	50@—	38@40
Sunflower, large	5½@6	5½@6	9¼@11	9¼@11	9¼@11	10@10½	10½@11	7¼@7½	4@4½
small	4½@5½	5@6	6@7½	6@7½	6@7½	6¾@7¼	8@9	5¾@6¼	3½@4
Worm, Levant	90@1.00	1.00@—	1.00@—	1.30@1.50	1.30@1.50	1.50@—	60@65	55@65	36@38
American	9@10	9@10	9@10	9@10	9@10	10@11	10@11	10@11	9½@10

SPICES.

	1916 Oct.	1916 July.	1916 April.	1916 Jan.	1915 Oct.	1915 July.	1915 April.	1915 Jan.	1914. Aug.
Cassia, Batavia, No. 1	20@21	21@24	26@27	20@21	18½@19	18½@19	19½@20	19@20	18@19
shortstick	16@17	19@20	23@24	*17@18	12½@13	12@13	12@13	12@13	11@12
Batavia, No. 2	15½@16	18@20	*21@22	*18@20	12@13	12@13	12@13	12@13	10@11
No. 1 Saigon rolls	40@41	51@52	65@70	58@60	33@34	33@34	31@32	31@32	28½@29
China, cases	12¼@13	14@15	17@18	12¼@12½	8¼@9	8@8½	9@9¼	8@8¼	7¼@7⅝
broken, extra	8¾@9	11@12	16½@17	11@12	6@6¼	6@6¼	6¼@6½	6@6¼	5¼@5⅝
buds	15@16	15@16	19@20	17@17½	13@13½	13@13½	12½@14	12½@14	11½@12
Chillies, Japan	22@23	28@20	31@32	35@36	33½@34	27@28	27@28	19½@20½	14@14½
Mombassa	31@32	34@35	40@42	35@36	26@27	27@28	27@28	21@22	14¼@14¾
Cinnamon, Ceylon, No. 1	25@26	28@29	29@30	23@24	22@23	23@24	28@29	28@29	30@31
No. 2	24@25	26@27	27@28	21@22	19@20	21@22	26@27	26@27	29@30
No. 3	23@24	25@26	26@27	20@21	18@19	20@21	24@25	24@25	28@29
Cloves, Amboyna	26½@27	26@27	26@27	*40@—	—@—	—@—	—@—	—@—	26@26½
Zanzibar	18@18½	16¾@17	18@19	20@21	15¼@15¾	15¾@16	17¼@18	17¼@17½	15¼@15¾
Penang	35@38	35@38	36@37	34@35	34@35	34@35	34@35	34@35	28¼@29
Ginger, Cochin, A, B, C	10@11	11¼@11½	11¾@12	9@9¼	8@8½	8@8½	7¾@8	7@7¼	6¼@6½
Cochin D	11¼@11½	11¼@11½	11@11½	9@9¼	7@7¼	7¼@7½	6½@7	5¾@6	5¼@5½
Africa, No. 1	9¼@9¾	9@9¼	11½@12	9@9¼	7¼@7¾	7½@7¾	6¾@7	5¾@6	5@5½
Japan	7¾@8	8¾@9	9¾@10	7¾@8	6¾@7	6½@6¾	8½@9	7@7½	5¾@5½
Mace, Banda	63@64	68@70	70@72	64@65	60@61	60@61	63@66	65@66	64@64½
Penang, No. 1	62@63	70@72	70@72	*62@63	*60@61	60@61	62@63	64@65	61@62
Penang, No. 2	58@60	59@60	59@60	52@53	51@52	51@52	53@54	53@54	56@57
Batavia, No. 2	51@52	53@56	55@56	45@46	44@45	45@46	49@50	47@48	49@50
Nutmegs, 105s to 110s	19½@20	22@23	30@31	18½@19	13¼@13¾	13¼@13¾	14½@15	14¼@14½	13½@13¾
75s to 80s	24½@25	30@31	40@42	25@26	15¾@15¾	16¼@16½	17@18	16@16½	15@15¼
grinding	19@20	23@24	30@31	17½@18½	13¾@14	14@14½	14¼@15	14½@15	13¼@13⅝
Paprika, Spanish	16½@20	16¼@19	16¼@19	15¾@19¾	15¾@19¾	15¾@19¾	6¾@20	—@—	20@29
Hungarian	*50@—	*50@—	*50@—	*50@—	*50@—	*20@22	nominal	—@—	16@19
Pepper, black, Singapore	17¼@17½	17¼@17¾	19¾@20	*16@16½	13¼@13½	13¾@14	14¾@15	11¾@12	11¼@11½
Acheen	16½@17	17@17½	19¼@19½	*15@15¼	12¾@13	12¼@12¾	14½@15	11¼@11⅝	10⅝@11
Aleppy	18½@19	18½@19	20¼@21	17¼@18	13¼@13⅝	12¾@13	14¼@15	13@13¼	11¼@11⅝
Lampong	17@17½	16¾@17	19¼@19¾	15½@16	14@14½	14¼@14½	14½@15	11¼@11¾	10⅝@11
Tellicherry	18¾@19¼	19@19¼	20¼@21	17½@18	13½@13⅝	12¾@13	15@15¼	13@13¼	11¼@11⅝
white, Singapore	21½@22	22@22½	25@26	21@22	18½@19	20½@21	24@25	21½@22	18¼@19
Penang	21@21½	20½@21	24@25	19@19½	17½@18	19¼@19½	19¼@19½	18¼@18¾	16¼@16¾
Pimento	5¼@5½	4½@4¾	6@6¼	4½@4¼	3½@3¾	3⅝@3¾	4@4¼	4@4	4¼@4¼

WAXES.

	1916 Oct.	1916 July.	1916 April.	1916 Jan.	1915 Oct.	1915 July.	1915 April.	1915 Jan.	1914. Aug.
Bayberry	21@21½	21¼@23	24@25	22@24	20@21	21@22	23@24	25@27	27@30
Beeswax, white, pure	40@50	47@55	47@55	47@55	47@55	42@45	40@42	45@55	47½@50
yellow, crude	30@34	32@34	32@34	32@34	33@38	30@33	30@37	28@30	39@40
yellow, refined	35@40	36@39	36@39	36@39	33@37	31@35	31@35	30@35	40@41
Candelilla	23@25	23@25	25@30	25@30	25@30	25@30	35@—	nominal	22@24
Carnauba, flor	50@52	50@52	50@52	45@47	45@47	45@47	nominal	50@55	50@51
No. 1	43@44	44@45	47@49	38@40	38@40	38@40	45@50	45@50	45@46
No. 2, regular	38@39	38@40	40@43	33@35	33@35	33@35	40@45	40@45	42½@43
No. 2, N. C.	32@33	32@34	33@35	29@30	29@30	29@30	32@34	38@40	32@33
No. 3	28½@27	27½@28	28¼@29½	22@23	22@23	24@25	27@28	29@32	33@33½
No. 3, N. C.	26½@27	27@27½	28@29	22@23	22@23	24@25	25@—	30@33	29@30
Ceresin, yellow	10@14	10@14	10@14	10@14	10@14	10@25	10@25	10@25	12@22
white	14@16	14@16	14@16	14@16	14@16	15@25	15@25	15@25	14@28
Japan	14½@15	15¾@16	17@18	13@—	12¾@13	11¾@12	12¾@15	10¼@11	11@11¼
Montan, crude	*28@30	*28@30	*28@30	*28@30	*24@26	22@24	16@18	9@10	6½@7½
bleached	—@33	—@33	—@33	—@35	33@35	33@35	nominal	35@40	24@25
Ozokerite, crude, brown	45@60	45@60	45@60	28@40	28@40	28@40	28@40	28@40	21@25
green	80@90	80@90	80@90	*60@75	*50@60	32@36	32@36	32@36	25@30
refined, white	*75@80	*75@80	*75@80	*55@65	*55@65	30@40	30@40	30@40	25@30
refined, yellow	*60@65	*60@65	*60@65	*40@45	*40@45	25@30	25@30	25@30	25@30
Paraffine, crude, 103@105 deg	4@4½	4@4½	3¾@4	3¼@3½	—@—	—@—	—@—	—@—	—@—
118@120 deg	5@—	5@—	5@—	3½@4	2½@3	2½@3	2½@3	3¼@3¼	3¼@3¼
124@126 deg	5¼@5½	5¼@5½	4¾@5	3⅝@4	3½@3¾	3½@3¾	3½@3¾	3½@3¾	3½@3¾
refined, domestic, 118@120 deg	6¼@7	6½@7	6@—	3⅝@4¼	4¼@4¾	4¼@4¾	4¼@4¾	4¼@4¾	4¼@4¾
125 deg	7¼@—	7½@—	7@—	4@4½	4¾@5	4¾@5	4¾@5	4¾@5	4¾@5
128 deg	8½@9	8½@9	7½@—	4¾@5	5¼@5½	5¼@5½	5¼@5½	5¼@5½	5¼@5½
133@135 deg	9¼@12	9¼@12	9@9½	6@6½	6¼@6½	6¼@6½	6¼@6¾	6¼@6¾	6¼@6½
140 deg	17@—	17@—	—@—	—@—	—@—	—@—	—@—	—@—	—@—
refined, foreign, 125 deg	*6@7	*6@7	*6@7	*6@7	*6@7	4½@4¾	4½@4¾	4½@4¾	4½@4¾
130 deg	*7@8	*7@8	*7@8	*7@8	*7@8	5@5¼	5@5¼	5@5¼	5@5¼
135 deg	*8@9	*8@9	*8@9	*8@9	*8@9	5½@6	5½@6	5½@6	5½@6
140 deg	*8¼@9	*8¼@9	*8¼@9	8¼@9	*8½@9	8½@9	8½@9	8½@9	6@6¼
Spermaceti, block	24@25	24@25	24@25	24@25	24@25	24@25	24½@26	24½@26	29@30
cakes	35@26	25@26	25@26	25@26	25@26	25@26	25¼@27	25½@27	30@31

* Nominal.

State Department Conferring on Chemical Drug Shipments from Germany.

Washington, Sept. 29, 1916.

American Ambassador Page, at London, held several conferences with Counsellor Polk of the State Department regarding the obtaining of concessions from the British government for the importation from Germany of several drugs and chemicals which cannot be obtained or manufactured successfully in this country. Arrangements are being made to present several petitions to the trade bureau of the British Foreign Office in the near future.

The office of the Trade Advisors of the State Department is hopeful of success in these new cases in view of the successes regarding the negotiations for the importation from Germany of novocain and salvarsan. The agreement was perfected September 6 for the importation of 1,075 pounds of novocain. About two-thirds of this amount had previously been ordered. The British government said, however, that the permit for this amount was not to be taken as a precedent for future shipment. The question of the supply of salvarsan in this country is believed to have been settled by an agreement under which the chemical firm of H. A. Metz, of New York, will manufacture the drug under a patent license from Farb. Hoechst, of Germany.

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The question of varnish is as important for you as for your customers, although if you handle Berry Brothers' products you have a safe and easy answer.

The consumer has learned the need for discrimination, and your intimate knowledge of varnish values enables you to give your customers practical advice when asked for.

The high grade dependability of our varnishes and enamels warrants their unqualified recommendation.

You can increase the volume of your varnish business by making a leader of Berry Brothers' line.

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Established 1858
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Vanillin

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FOR COMPLETE TABLE OF CONTENTS SEE PAGE 11.

Oil, Paint and Drug Reporter

LUME 90. NUMBER 14. MONDAY, OCTOBER 2, 1916. 100 WILLIAM ST., NEW YORK.

PAINT AND DRUG REPORTER Is Mailed on Saturday, Dated Monday.
ESTABLISHED 1871.

fol'owing publications are incorporated in the OIL, PAINT AND DRUG
ER:

INT AND OIL TRADE — NEW YORK DRUG BULLETIN
NEW YORK DRUGGISTS' PRICE CURRENT
SOAP MAKERS' JOURNAL — OIL AND PAINT REVIEW
WEEKLY DRUG NEWS

ished every Monday by the OIL, PAINT AND DRUG REPORTER, at 100 Street, New York. William O. Allison, President; D. G. Bogert, Secretary.

CRIPTION TERMS.—For the United States, $5.00; Canada, $6.00; other countries, $7.00 per annum. All remittances should be made payable L, PAINT AND DRUG REPORTER.

RTISING RATES will be furnished upon application.

STIONABLE OR UNDESIRABLE ADVERTISEMENTS WILL NOT EPTED.

red at the Post Office at New York as second-class matter under the ongress of March 8, 1870.

nists' Week"—A Milestone on the Path of Progress.

he first time the great American public, and particularly that section ch has its habitat within easy distance of New York City, has begun e what the chemists of the nation are doing and have done in the ent of our greatest national industries.

de in America" has assumed a new and more vital meaning. In con- tion to that other famous trade slogan which aroused competitors in sh Empire and in France to new exertions—"Made in Germany"—the America" prefix implies not only an increased domestic output along lines, but the creation within a few short years of industries which o become particularly identified with the United States.

e it is true that chemical science progresses along consistent lines l chemical-exploiting nations, in the Far East as well as in the heart eat laboratory and university nation now involved in world war, there n new exemplifications and new ideals of progress which have been ed for the first time in this country. True the seed may have been as origin, the laws governing processes the result of years of patient tion by men of another race, but in their application to new needs, resources, new sources of power, "Yankee ingenuity" in the adapta- nachinery, and the driving power for which American workers are world over, the harvest has been plenteous and surpassing fine.

joint convention last week of the American Chemical Society, the Electrochemical Society and the Technical Association of the Pulp r Industry, taken in conjunction with the wonderful display of the American effort as crystallized in the Second Exposition of Chem- stries, have established a new precedent in national scientific in- ndeavor.

the laboratory, the furnace, the university and from government de- s have come the best of the nation's trained men. They have con- fully and freely of their hard-won secrets for the glorification of their the development of their country. Almost every topic applying to e activity has been canvassed, since chemistry is the mother of the andicraftsman, and her sons are at the forefront in every branch of To the symposia have contributed the educator, the investigator, the n and health worker, the magicians of the crucible and the retort, the emonstrators by formulae that x plus y plus many another symbol, combined will produce inevitable results.

e has been no partisan self-glorification in the slogan of the chemists ca in convention assembled. "Made in America," to them is but the n of an ideal—not alone of production, not alone of deduction, not investigation. Being freely translated—for it is but a formula of a chemical formula if you like—it spells this:

reatest opportunity America has ever seen awaits the grasping. The as an essential factor in modern industry, has at last been granted m of the appreciation he so well deserves. Outside disturbances of de and world production have swept new and strange industrial o our shores, and the world is awaiting our verdict.

American chemist does not hesitate. The keynote of his ideals and his as struck with no uncertain hand at every session of the allied the past week.

e in America" is just as much the symbol of an ideal as of finished l in this, lies its essential difference to other world slogans so similar but signifying something far remote from the ideals governing the se hosts we have been privileged to be during an all too short visit.

ists Condemn Congressional Action on Dyestuffs.

ondemn the removal of natural and synthetic alizarin and dyes obtained rin, anthracene and carbazol, natural and synthetic indigo and all indi- ether or not obtained from indigo, from the special tariff accorded them nate, as detrimental to the establishment and development of the Ameri- uff industry and subversive of the best interests of the American people."

is the wording of condemnatory resolutions passed by the American Society at its "Dyestuffs Conference" on Wednesday last, following ate and severe criticism of the action of Congress in agreeing to the e report on the dyestuffs sections of the revenue bill which recently aw through the signatory affirmation of the President.

e was not a dissenting vote to this official disclaimer of the action of te and House conferees, particularly as the point was emphasized e excepted classes of dyes form 30 per cent. of the dye consumed untry, without taking into consideration aniline dyestuffs controlled s of foreign manufacturers.

wing the interview with Director Ralph of the Bureau of En- nd Printing at Washington, published in the Oil, Paint and Drug Reporter of September 25, and his statement that this government is again turning to German manufacturers for its supplies of printing reds and China and Prussian blues, which can only be imported by permission of the British government, further light has been thrown upon the reasons why the Director was forced to seek a supply abroad. In an interview given a representative of the Reporter, which will be found elsewhere in this issue, Mr. Ralph made the following statements:

That he is in sympathy with the idea of purchasing supplies for his Bureau from American manufacturers.

That it is impossible for him to obtain such dyes, although at frequent intervals during the past two years he had made persistent attempts to obtain them from domestic sources.

That there are not 1,000 pounds of reds suitable for use of the Bureau in the United States at the present time.

That the only color he is certain of in this country is black, and that he makes his greens by mixing blue and yellow, and is buying all the yellow he wants in this country.

That as things now stand if he were obliged to depend on the American market for colors he would either have to shut down or use a substitute, and that substitute would be black, because he cannot get the reds.

Director Ralph further expressed his belief that American chemists could produce every pound of color used in the Bureau of Engraving and Printing. The fact that it is not being produced here, he believes, is due to the existing opportunity to make more money in supplying cheaper colors to the textile trades.

With this statement as a basis, the chemists at their dye conference adopted a resolution setting forth the conditions as advanced by Direcor Ralph, and expressing the belief that it is the province of the American Chemical Society to investigate the status of American dyestuffs manufacturers as possible sources of such supplies for government use, referring the matter to the same committee appointed to consider the revenue bill indigo and alizarin exemptions.

In the debate pending the adoption of the resolutions the statement that Director Ralph had sought relief from American dyestuffs producers was denied, although the Director of the Bureau, in his interview in the Reporter of this week specifically names thirteen firms with which he communicated in regard to possible supplies.

With such an immediate reponse to a condition thus officially brought to their notice, and the immediate suggestion made by certain large aniline color producers in this country that an attempt would be made to meet the demands of the government, and remove it from its position as a supplicant to international courtesy at a time when the embargo lines are being drawn closer about Continental Europe, there seems to be a promise of hopefulness.

The production of aniline dyestuffs in this country during the past two war-years has expanded to an almost unbelievable extent. It has assumed such importance that the licenses have just been granted for the manufacture of German patented aniline colors in this country, a condition indicative to any one conversant with the situation that the American aniline color maker is a factor to be reckoned with. The display of finished colors and samples of the work done with them, as shown at the Exposition, is evidence of the perfection of the workmanship and the stable character of the output of the American chemical dyestuffs laboratory.

In combination with the Bureau of Chemistry of the government, Director Ralph is now seeking to develop an exclusive color for the use of the government Bureau of Printing. The government has appropriated the sum of $50,000 for an experimental dye laboratory under the charge of Carl L. Alsberg, Chief of the Bureau of Chemistry. With this new opportunity for American chemical development, and with a government market open—true, for a comparatively small amount—and with the special committee of the chemists endeavoring to the best of their unusual ability to bring about still further advances in American dye chemistry, the future of the industry in this country is indeed brighter than ever before.

A Year of Achievement by the N. W. D. A.

The National Wholesale Druggists' Association, which meets in 42d annual convention at Baltimore today, has ample cause for satisfaction with the achievements of the past year, and with the changes in legislation and government and judicial rulings which have been obtained for the benefit of the trade. The list of significant modifications or amplifications of such rulings, either beneficial or burdensome, is a long one, but in the work preliminary to satisfactory settlement the officers and committee of the N. W. D. A. played no uncertain part, and to them is accorded ungrudging credit by the thousands of retailers and consumers to whom such burdens had been onerous in the extreme.

While the members of the Association have been practically a unit in supporting the government in the administration of the Harrison anti-narcotic law, objection was made and sustained to certain seemingly unnecessary and involved details in the forms for the delivery of narcotics, and it was only by the unceasing and intelligent efforts of the Association that modifications in these regulations were obtained, which while not impairing the effectiveness of the Harrison law, will remove unnecessary cause of criticism and unite the entire drug trade in the support of this governmental regulative measure.

Since the passage of the so-called adhesive stamp tax, with its provisions requiring stamps of various denominations to be affixed upon packages of perfumes, cosmetics, toilet goods, etc., the Association has been energetic in attempts to secure the removal of this serious handicap to the retail trade. Its repeal, together with the provisions of the section of Schedule A of the tariff in regard to documentary stamp taxes on bills of lading, etc., and the defeat of the amendment calling for the suspension of the customs drawback regulations are still additional causes of satisfaction.

While attempts to secure the passage of the Stephens bill in the interest of the price maintenance policy to which the Association is committed failed at the last session of Congress, it is believed that the attempt will be successful in the near future.

Further gratification is to be gained in the decision of Judge Lacombe

of the United States Circuit Court of Appeals in the "Cream of Wheat" case, which determined the right of a trader to buy from whom he pleased and sell to whom he pleased, and that his selection of seller and buyer was wholly his own concern. Judge Lacombe made the interesting comment that "We have not yet reached the stage where the selection of a trader's customers is made for him by the government." The decision of the court that neither the Sherman nor the Clayton Act had any bearing upon this question is the source of additional satisfaction to the N. W. D. A., which was further heightened by the "price protection" decision of Judge Lacombe in the Victor Talking Machine case.

These, of course, are achievements of interest to everyone in the drug trade in all its allied branches, but the members of the N. W. D. A. have still further reason for satisfaction, and in this instance the application is distinctly personal. During the past year the Park cases have been settled.

After 21 years of litigation suits against the Association and individual members, alleging restraint of trade practices, have been removed finally from the courts and subscriptions from wholesale druggists toward the settlement funds have been in such satisfactory amounts that Secretary F. E. Holliday is satisfied the full amount will be raised before the adjournment of the convention on Thursday night.

This is no mean record of accomplishment. The National Wholesale Druggists' Association, collectively and individually, are "doers, not talkers." They do their talking at their conventions, in committee, and at hearings on topics affecting the drug trade as a whole. And the N. W. D. A. will be forgiven even if some of the talk at the Baltimore convention is self-congratulatory.

Reported Argentine Linseed Shortage Skies Prices.

Cable advices from the Argentine which were received this week confirmed earlier advices that the drought which has existed there for the past two months and more has been killing off the linseed crop. It was at once apparent that the conditions existing in the South American Republic were much more serious than had been intimated.

The earlier reports, which were lacking in detail, but which were all of the same tenor, stated that damage was more than probable unless the dry season were broken by immediate rains. Early last week cables were much more positive in damage assertions. The trade at large, however, was not prepared for the pessimistic reports which were received this week from many different sources. For instance, special information from the Northern part of Argentina was to the effect that the damage was so great that vast areas devoted to linseed had been abandoned entirely, as the possible yield would have been too small to pay for harvesting.

The advices received in New York this week state plainly that at least 75 per cent. of the crop in the northern parts of the Argentine will not be harvested.

Nothing of an official nature has been issued in the Argentine, either in respect to acreage or to forecasting the probable out-turn. Experts in the fields, after deducting the probable loss in production from these abandoned sections, based upon a fair yield per acre for those remaining, assert that the probable yield will not be much, if any, in excess of 20,000,000 bushels. These figures, while from the nature of the premises upon which they are based open to the criticism of exaggeration, indicate at least a marked falling off from the exportable surplus of the last year's crop.

Going back some years, a crop in the Argentine ranging from 20,000,000 to 30,000,000 bushels was considered about normal, since during that period the North Americas—United States and Canada—were such heavy producers of flaxseed that they were in a position not only to supply their own needs but to export flaxseed for foreign consumption.

For the past four years the crop in America has been below normal, so much so that in place of exporting seed the country has been forced to turn to foreign sources of supply to meet domestic demands. With the added demand here Argentine growers of flaxseed immediately increased production, with the result that a crop of 40,000,000 bushels was not exceptional, and the loss in total consumptive supply in this country was made up from South American imports.

This increased production of the Argentine Republic, coming as it did when the shortage here rendered outside production a necessity, proved equal to the demands until this year, when the estimate of the linseed crop in this country is about 12,000,000 bushels short, thus developing the market factor of two great producing countries, both with smaller crops, and the probable available supply of export seed from South America less than had been looked forward to by the world consumers.

For the past three weeks there has been a steady upward movement in the price of seed and linseed oil in domestic markets as a result of the advices—despite their ambiguity—from the Argentine. With more definite information at hand this week, upward revisions became more marked, and on Friday, when it was seen that Argentine seed had taken a jump of 12 cents a bushel in the primary market, the effects were felt immediatly in the Duluth market and in every oil market in this country.

Large consumers of oil have generally taken a bearish view on oil prices and the majority have neglected to cover future requirements, with the result that the news from the Argentine was particularly displeasing to them, since it is taken to indicate that the low price period for oil has been passed.

It must not be forgotten, however, that the time for harvesting Argentine seed is the month of December, and many inquiries have been heard in the trade during the past few days as to whether or not exceptionally favorable conditions in the Argentine during the next two months could not offset wholly or in part the damage to the growing crop now reported, although the extent of the damage has not yet been officially placed. It is, however, difficult to take a roseate view of the outcome, when the definite reports of the damage that has been done, with definite abandonment of many thousands of acres of seed, are taken into consideration.

War-Time Price Studies of Seeds, Spices and Waxes.

The study of the seeds, spices and waxes divisions of the New York drug markets for a period of two years, from August, 1914, until the first of this month, emphasizes in no uncertain manner the deductions made in the similar study last week on botanicals—the increasing number of new sources of supply drawn upon because of the exclusion of Germany, Austria and Turkey and Prussian-controlled colonies from the world marts. In no other division of these market price studies, which have been a feature of the Reporter since July 31, is the demand for new materials from new primary markets more apparent than in the botanical drug market.

There remain but two more studies of the sundry drug and miscellaneous list, which will appear on October 9th and 16th. The period covered is considered by quarters from August, 1914, the first war month, until September 30th, of this year, and the prices prevailing in the New York drug markets are the basis of comparison.

Immediately following the declaration of war many Austrian and German seeds disappeared from the market here, to be followed later by still others as the domestic supply on hand decreased to a minimum. Included in this category were Germany poppy and rape seeds, and both German and Trieste mustard seed, Morocco cumin and Sicily canary seeds. German fennel seed became so scarce as to be almost unobtainable at times, and Levant wormseed soared to almost prohibitive rates as the shortage became acute.

Such substitutes were employed as Levant aniseseed, Mogador cumin seed (African), French and Italian fennel seed, Dutch mustard, Dutch and Spanish canary, Bulgarian and Japanese rapeseed, Dutch, India and Turkish poppy seed, which were not so generally satisfactory in quality, although the prices obtained were, as a rule, about on a parity with those prevailing for the commodities heretofore employed prior to the war.

Similarly in the list of spices regularly quoted by the Reporter, Hungarian paprica disappeared from this market early in the period under review, leaving the Spanish article the sole item available in this group.

With the spices, as in all other instances of Oriental origin, there were two distinct factors which resulted in the limitation of supplies received in this country—either direct or indirect embargo, and the lack of carriers for freight transportation. Advances of from two to five cents per pound are to be noted in the present prices throughout the crude spice list over those prevailing at the outset of the war.

In the group of waxes some recessions instead of advances have occurred as the leading consuming markets of Europe have cause to draw upon the available supply to the extent normally registered. This has been particularly true in the list of Brazil waxes, known as canaubas, where declines of from two to four cents have occurred in all grades except that known as flor. Bayberry and beeswaxes have shown similar conditions, and for similar causes. On the other hand, ozokerite and its refined product known as ceresin, together with montan and the Mexican vegetable wax known as candellila have had phenomenally sharp advances, as supplies have been cut off.

Paraffine has soared as the foreign supply has been eliminated, and the American petroleum product manufacturers have experienced great difficulty in meeting the demand for export consumption. The petroleum market conditions both as regards export and domestic consumption have been reflected in the paraffine market.

The most sensational advances in the list of seeds have been noted in caraway, celery seeds and Levant wormseed. Because of greatly curtailed shipping facilities, the incoming amounts have been greatly diminished within the past two years. Caraway has been advanced from 8 cents a pound to above 27 cents, while celery has moved upward from 17½ to close to 30 cents. Levant wormseed has risen from 36 cents to $1. Cardamoms was the notable exception in the seeds list, as it registered a decline from $1.30 to 85 cents for bleached, and from $1.15 to 68 cents for decorticated.

National Paint, Oil and Varnish Association Convention.

The twenty-ninth annual convention of the National Paint, Oil and Varnish Association at Atlantic City, which opens Monday next, October 9th, promises to be of unusual interest and value. The convention will open with the largest membership registered in the Association since its organization, an increase brought about despite the fact that the dues were doubled to finance the permanent offices of the Association in this city. Two new clubs have been organized and their delegates for the first time will be present at the Atlantic City gathering in an official capacity.

The past year has been one of accomplishment for the N. P., O. and V. A. Its officers and committees have labored successfully and with increasing enthusiasm as the results of their efforts became more generally apparent, and the trips throughout the country by Secretary Horgan in the interest of new membership and the better understanding of trade conditions have been of marked effect in achieving the results attained. While it is but eight months since the permanent secretary undertook the executive detail work of the Association—since February 1, 1916—and established offices in New York, the results obtained have been such as to more than prove the wisdom of the innovation. There is an increased feeling of satisfaction, of loyalty to the Association, and of renewed interest in the work of that body for the general advancement of the trade that augurs well for the achievements of the coming year, and for the helpful character of the sessions at Atlantic City next week.

The Trade Names Bureau, the "Dutch Treat Clubs," with their inspiration of good-fellowship among local paint men in the larger cities, the monthly letters of President Cheesman, the constant touch of Secretary Horgan with the subjects of importance to the members of the N. P., O. and V. A.—all these have contributed to the successful record of the year just closing. And, while the coming convention will have "Business, More Business and Better Business" as its keynote, it will also be more or less in the nature of a celebration of the new era upon which the Association has so successfully embarked.

As is customary, a complete detailed report of the proceedings of the convention will be printed in an extra edition of the Oil, Paint and Drug Reporter, to be published following the adjournment of the final session.

OBITUARY.

COL. JOHN B. PURCELL.

John Barry Purcell, one of the best-known and best-loved men in Richmond, Virginia, a veteran of the Civil War, which he entered as a schoolboy in July, 1864, a former president of the National Wholesale Druggists' Association, having been chosen to that office at the Philadelphia meeting in October, 1896, is dead at the age of 67.

Colonel Purcell was born in Richmond, September 17, 1849. Enlisting in the Confederate service in 1864, at the conclusion of the war he entered the Virginia Military Institute, from which he was graduated in July, 1868. Immediately following his graduation he became connected with the firm of Purcell, Ladd & Co., which was established by his father in 1840, and in 1872 he was admitted to the firm.

His title of colonel was gained by his election to the command of the First Regiment, Virginia Volunteers, in 1878, and his appointment by the governor as a military visitor to the military institute of which he was an alumnus. Active in civic and military affairs in his home city, several times president of the Chamber of Commerce of that city, and a director in banks and financial bodies, his record of citizenship is a fine one.

In speaking of Colonel Purcell, the Richmond News-Leader of September 25 said editorially:

Colonel John B. Purcell served faithfully wherever duty called him. As a boy soldier in the Confederate army he was ever at his post, an example of readiness to do and to dare and to obey. In the days of storm and stress and wreck following the war, Colonel Purcell was a leader among the young men in rebuilding the city materially and socially. In association with his father and uncle in one of our largest wholesale houses, he was a pioneer in re-establishing Richmond's outside trade and in rehabilitating old concerns both within and without the city. And when he turned his attention more distinctly to finance, he became potent in developing Richmond's banking interests and making the city the great and influential banking center she now is.

Public office Colonel Purcell never sought, and though frequent efforts were made to thrust it upon him, he always declined. Business positions such as the presidency of the Chamber of Commerce, membership of advisory

committees for the forwarding of commercial and financial and legislative movements for Richmond's advancement sought him, however, and he was ever ready to serve at any personal sacrifice.

Colonel Purcell's civic pride was only equaled by his reverence for all things associated with the Confederate cause. Few men in the community had done more to keep the memory of that cause alive and to aid and cheer the sufferers from devotion to it.

In the death of Colonel Purcell a pillar of wood, loyal and progressive citizenship has fallen.

JOHN P. SEWARD.

John P. Seward, assistant treasurer of the Prairie Pipe Line Company, died suddenly recently from acute indigestion. More than a quarter of a century ago he became connected with the Standard Oil Company at Bradford, Pa., where he was connected with the Buckeye Pipe Line in August, 1904, joined the Prairie Oil and Gas force in this city, where he had resided for most of the time since. When the Prairie Pipe Line Company was organized he was elected assistant treasurer.

He was born at Titusville, Pa., May 25, 1872.

MAJOR WM. G. RAMSAY.

Major William G. Ramsay, vice-president and director of the du Pont Powder Company, and chief engineer of its construction department, died last Thursday, after a brief illness, of pneumonia. He was the principal factor in the physical development of the du Pont plants, caused by the extraordinary demands put upon the company by the European war. Major Ramsay built many explosive factories throughout the country, and recently was engaged in the construction of a plant in Montana, which will be named Ramsay, in his memory. He was born at the Presidio, San Francisco, in 1866. He was a Federal inspector at New Orleans, and later was with the Pennsylvania, Baltimore & Ohio, and Cheasapeake & Ohio railroads.

John McElhinney, 70, an oil driller in Pennsylvania from the early days of Oil Creek until two years ago, died last week. During the operations on Oil Creek he became a driller, and followed that occupation in the Bradford, McDonald, Cranberry and Butler fields and finally went to West Virginia, where he remained until two years ago, when he went to Calineville and settled on a large farm.

Prairie Pipeline Company Makes Joint Tariff.

Washington, Sept. 29, 1916.

The Prairie Pipeline Company has announced a joint tariff with the Illinois, Tide Water and Northern Pipeline companies and the New York Transit Company of 70 cents per barrel from Humboldt, Argo, Cobb, Bartlesville, Creek, Manuel, Indian, Crerokee, and Captain Creek stations to Bayonne, N. J. In addition the oil tendered for shipment in Kansas and Oklahoma, accessible to the gathering lines of this company will be subject to a further gathering charge of 12 cents per barrel. Effective September 25, 1916.

Public Hearing on Standards for Spices to Be Held in New York, Oct. 16.

Washington, Sept. 29, 1916.

A public hearing on definitions and standards for spices will be held in New York, on October 16, 1916, by the Joint Committee on Definitions and Standards representing the United States Department of Agriculture, the Association of Official Agricultural Chemists, and the Association of American Dairy, Food and Drug Officials. All persons interested are invited to attend. Those who desire may present their views in writing to the secretary of the committee, Bureau of Chemistry Building, Washington, D. C., on or before the date set for the hearing. It is desired by the committee to obtain all possible information from the trade and others on the question of definitions and standards. The hearing will be held at 10 a. m., on October 16, 1916, in the office of the United States Food and Drug Inspection Laboratory, room 1012, Appraiser's Stores, Christopher and Washington streets, New York, N. Y.

Spirit Imports Must Be Certified or Else Will Be Excluded by United States.

Washington, Sept. 29, 1916.

American importers of spirits from Great Britain were notified today by the Department of Agriculture that, after December 1, shipments offered for entry to this country will be refused admission unless accompanied by a certificate from British excise authorities that the goods meet the requirements of the English immature spirits restriction act of 1915. This act provides that no British or foreign spirits shall be delivered for home consumption unless they have been warehoused for a period of at least three years.

The new regulations, authority for which is given by the pure food and drug act, make an exception of spirits imported from Geneva, perfumed spirits, foreign liquors and spirits intended for use by scientists, manufacturing chemists and perfumers.

Arrangements for granting of certificates resulted from negotiations between the State Department and the British Foreign Office.

TRADE AND NEWS ITEMS

The American Independent Oil Company of Indiana has increased its capital from $200,000 to $1,000,000.

The American White Cross Laboratories, Inc., of New York, has increased its capital from $5,000 to $50,000.

The eight-stand cotton gin of the Texas Cooking Oil Company, at Burlington, Tex., has been burned, with a loss of $18,000.

The Ethical Drug Stores Corporation, of Dover, Del., capital $250,000, has been authorized to do busines under the laws of New York.

The Planters' Cotton Oil Company, Pine Bluff, Ark., has been organized, with $125,000 capital, by L. M. Andrews, D. B. Niven and T. H. Gregory.

The Intravenous Products Company has purchased property in Denver, Colo., on which a chemical plant, costing about $70,000, is to be erected.

The Best Products Company, Inc., of Cleveland, manufacturer of paints, etc., has been authorized to conduct its business under the laws of New York.

L. G. Ryan, managing director of the Mallinckrodt Works of Canada, made a visit to the New York branch of the Mallinckrodt Chemical Works last week.

The Contact Process Company, Buffalo, N. Y., chemical manufacturers, is now erecting a building for the manufacture of sulphide of soda and hyposulphite of soda.

The American Petroleum Company, Houston, Texas, has commenced grading for its new oil refinery. The company was organized last March with a capital of $1,500,000.

Gustav Schwab and William H. Dodds, of the Michigan Drug Company, of Detroit, visited numerous friends in the New York wholesale drug trade at the close of last week.

The Virginia-Carolina Chemical Company has declared the regular quarterly dividend of 2 per cent. on the preferred stock, payable October 15, to stock of record September 30.

The American Oil Export Company, petroleum products, etc., has been incorporated under the laws of New York, with $100,000 capital, by G. W. Gelling, F. H. Stokes and J. J. Thornley.

The W. Beckers Aniline and Chemical Works will erect a building on the southeast corner of Ditmas avenue and East Eighty-thrid street, Brooklyn. The building will be used for the manufacture of azo dyes.

E. L. Cannon, president of the Warren Refining and Chemical Company, Cleveland, Ohio, spent a few days in New York last week on his way home from the convention of the National Petroleum Association.

W. T. Rightor, formerly sales manager for the San Antonio Drug Company, of San Antonio, Texas, has taken a similar position with H. Gamse & Brother, manufacturers of druggists' boxes and labels, in Baltimore.

At a meeting of the directors of the Seaboard National Bank, held last week, E. J. Cornish, president of the National Lead Company, was elected a director to fill the vacancy caused by the death of W. W. Lawrence.

Frank Happel, formerly president of the Kentucky Paint Manufacturing Company, and William DeForester, a resident of Louisville, have organized the Happel Paint Company, and are installing a plant at Eighth and Grayson streets.

The Fisheries Products Company, of Wilmington, N. C., a $125,000 corporation, is reported to have leased the plant of the Carolina Fish and Oil Company, on the Cape Fear River. The plant has a capacity for handling 5,000 barrels of fish.

The Buttercup Oil and Car Company, of Louisville, recently incorporated to do a tank car and other cotton oil business, has filed amended articles, giving the company the right to engage in the business of handling and storing oil and operating warehouses.

William Stridiron, who died at his home in Detroit on September 18, was one of the best-known varnish men in the country. For almost half a century he represented Berry Bros., but he retired from active work a few years ago because of advancing years. Mr. Stridiron was 85 years old at the time of his death.

The next regular meeting of the Board of Governors of the Insecticide and Disinfectant Manufacturers' Association will be held at the office of Secretary Benjamin M. Kaye, 192 Broadway, New York city, October 3, at 3 p. m. This is the first meeting since June and a number of important matters will be taken up, primarily the Wadsworth bill, now pending for Congressional action, the extension of membership and the consideration of plans for the next annual meeting in December.

The Cuban Potash Corporation has been organized at Dover, Del., with $5,000,000 capital stock, to acquire, own and develop lands containing potash and deal in fertilizers. The incorporators are Thomas C. Meadows, Irving E. Burdick and Theodore B. Heller.

The Owensboro Paint and Glass Company, Owensboro, Ky., and the Public Drug Company were among two concerns dismissed at examining trials in the Circuit Court on charges of violating the statute in failing to use the word "incorporated" in connection with their advertising.

Big developments are being planned by the Goodwater Graphite Company, of Goodwater, Ala., incorporated with $100,000 capital to develop graphite holdings in Coosa and adjoining counties. The incorporators include W. L. Shumate, Jr., T. D. Epps, J. R. Maloney and Eugene Argo.

The menhaden fishing steamer Menhaden, belonging to the Dennis Fish and Oil Company, of Cape Charles, Va., caught fire on last Thursday morning, and was damaged to the extent of $2,000, partly covered by insurance. The vessel was at Sharptown, Md., for repairs at the time.

The recently incorporated Melick Refining Company has practically decided to locate its new plant at Lexington, Ky. David L. Melick, president, states that the company is planning a plant to cost in the neighborhood of $2,500,000, employing 800 men, and with a capacity of 5,000 barrels per day.

The North Fork Oil Company, of Franklin, W. Va., which has been incorporated with a capital of $50,000, will sink test wells for oil in that county. John A. Nelson is president of the corporation, and has spent nearly twenty years in the oil fields of Texas. Riverton will be the headquarters for the operations.

The Standard Guano Company, Continental Building, Baltimore, has let a contract for the erection of an acid phosphate plant at Curtis Bay, to have a capacity of 350,000 tons a year. The buildings are to be of steel and reinforced concrete. The Chemical Construction Company, of Charlotte, N. C., has the contract.

A syndicate has offered to purchase the $4,000,000 bonds of the General Pipe Line Company, of California, together with the participation certificates, representing $200,000, the purchase price of Class A stock. The syndicate representing the General Pipe Line bonds cossists of Drexel & Co., C. D. Barney & Co., Tucker, Anthony & Co. and James B. Colgate & Co.

Substantial increases in wages have been decided upon for workers in the hand window glass factories at a conference held at Cleveland, Ohio, between the wage committee of the National Window Glass Workers' Association and representatives of the factories. The new scale will affect approximately 5,000 men in Pennsylvania, Ohio, Kansas, Oklahoma and Indiana.

Attorney C. H. Ruhl, for the A. Wilhelm Paint Company, Reading, Pa., has filed an equity suit against J. H. Hindle, to have the defendant restrained from selling or otherwise disposing of certain color formulas which he has in his possession. Mr. Hindle has been foreman of the color department of the company. Judge Endlich granted a preliminary injunction.

On petition of three creditors whose claims aggregate $1,400, the Chesapeake Glass Company, of Baltimore, was adjudged a bankrupt in the United States Court there last Thursday, and George W. Manly was appointed receiver, under a bond of $6,000. J. William Strobel and Henry W. Brown, composing the defendant company, admitted its insolvency. The company has been operated for a number of years.

All-year car show week seems to have opened very successfully in all parts of the country, according to advices received by KisselKar representatives in this city. The following message from the Kissel factory tells the story:—"Telegrams from most of the important points from New York to San Francisco report very large attendance, and the greatest interest on opening day of all-year car show week. New models highly praised everywhere and every indication of record-breaking sales."

The American Can Company has again advanced prices, this time about 12 per cent. This is the fourth advance this year, and can prices are now at the highest levels which have prevailed for eight years, due largely to the higher cost of tin plate. The Nos. 1, 2 and 3 sizes of sanitary cans, which are used principally for canning of fruits and vegetables for home use, are now selling at $14.50, $20.50 and $26 per thousand, respectively. The No. 10 can, which is used largely for packing apples, tomatoes, etc., for hotel use, is selling at $4 per thousand over the last quotation.

Charles D. Wettach has been elected president of W. W. Lawrence & Co., to fill the vacancy caused by the death of W. W. Lawrence. Charles McKnight, president of the Western National Bank, of Pittsburgh, has been elected vice-president.

W. L. Whitehouse, Scranton, Pa., receiver for the Barium Products Company, has filed his fir-t account as receiver. The plant of the company was destroyed by fire in February, 1915, and all the insurance money went to the bondholders under the terms of the mortgage. Subsequently the land was sold by the sheriff for the benefit of the bondholders and none of the proceeds passed through the hands of the receiver.

"Clean Up Rubbish!" will be the slogan of Fire Prevention Day, October 9. Fire Commissioner Robert Adamson, of New York, has enlisted aid of civic organizations, firms and corporations to make the day an object lesson to the city. Seven floats, showing fire dangers, and emphasizing the carelessness of citizens toward such hazard, will be part of the fire prevention parade.

One of the oldest and best producing properties in the old Hickory oil field, Forest county, Pa., changed hands last week, Messrs. William H. Roberts and E. E. Arrowsmith, of Pittsburgh, having closed a deal for the purchase of the holdings of George H. Lowe, of Jamestown, N. Y., the property being that known to oil men as the Dawson Run Oil Company, with about thirty producing wells. A number of these have been continuous producers for the past thirty years.

The reorganization of the United Dyewood Company, of Portland, Me., a $10,000,000 corporation, has been effected by the formation of the United Dyewood Corporation, of Dover, Del. The new company has been incorporated, with a capital of $20,000,000, by Harrison Tweed, Welton C. Percy and W. F. Cahill, all of New York. The business was described as to engage in the "manufacture of chemicals, colors, coloring matter and dyestuffs; to purchase, sell and deal in these products, and to promote research tending to improve the processes of manufacturing dyewood extract."

If you have surplus stocks of chemicals, dyestuffs, oils, paints or fertilizer materials you wish to dispose of, or if you wish to make purchases in these lines, we would suggest that you consult the Classified Business Opportunities on pages 2 and 3 of the weekly issues of the Reporter. Advertisements are inserted under this heading, without display, at the rate of $2 per insertion, 48 words or less. In excess of 48 words a charge of 25 cents is made for each additional six words. Rates for display advertisements will be furnished upon application to Oil, Paint and Drug Reporter, 100 William street, New York city.

In its desire to branch out in general lines of industry, especially in view of the fact that a large part of its explosive manufacturing plant will be useless after the war in Europe, E. I. du Pont de Nemours & Co. have found that the artificial leather branch of their business, started as an experiment, has assumed major proportions, with fine prospects. The manufacture of artificial leather, known as fabrikoid, is carried on by the Du Pont company at two plants, one at Newburgh, N. Y., and the other at Toronto, Canada. The Du Pont company has recently purchased the Fairfield Rubber Company, at Fairfield, Conn. This company manufactures a coated textile similar to fabrikoid.

The directors of the Texas Company have recommended a 25 per cent. increase in the capital stock to stockholders, and the proposal will be voted upon at the annual meeting to be held November 14. This increase will bring the capitalization of the company up to $55,500,000. The new stock is to be offered at par to stockholders of record November 30, payments to be made in two installments, one on or before January 5, 1917, and the other by April 5, 1917. The payments will bear interest at 6 per cent. from January 5 to April 1. Dividends will not accrue on the new stock until April 1. Proceeds of sale of new stock, as heretofore, are to be applied solely to extension of plants and other facilities to take care of the continued growth of business.

(For other Trade Items, see Table of Contents on page 11.)

Navy Department to Advertise for Six Months' Supply of Gasoline.

Washington, Sept. 29, 1916.

Between November 15th and December 1, the Navy Department will advertise for bids for a six months' supply of gasoline for naval stations and navy yards on the Atlantic Coast. It is estimated that the total quantity of gasoline required will be 200,000 gallons. About the same time the department will advertise for a supply of gasoline for the Pacific Coast stations and yards which will require about 50,000 gallons.

DIRECTOR PRINTING BUREAU TELLS HOW HE TRIED TO GET DYES HERE

Stands Ready to Purchase Made in America Colors, and Believes American Chemists Can Produce Them if They Would.

Washington, Sept. 29, 1916.

Director Joseph E. Ralph, of the Bureau of Engraving and Printing, read with interest the editorial advocating the purchase in the open market of colors for the bureau as published in the Oil, Paint and Drug Reporter last week. Mr. Ralph declared that he was in sympathy with the idea of purchasing dyes for his bureau from American manufacturers, but declared that it had been impossible for him to obtain such supplies, although he had frequently during the last two years made every effort to get them.

Mr. Ralph made clear the fact that his purchase of German dyes was made only because he knew of no other place to purchase them, and he regarded his latest contract to obtain such dyes from Germany of advantage to consumers in this country, especially in the case of reds, which he said are so limited in quantity and insufficient for the demand, that by obtaining his supplies from abroad he elimintes the bureau from the market and permits other users of these articles to have a better chance to obtain them.

"Because I did not go into the market strongly for dyes that came over on the Deutschland, permitted the use of those dyes in the ordinary channels of trade, where they have been sorely needed," he added.

Seeking Dyes Vainly in this Country.

Mr. Ralph has declared that he is not only willing to purchase dyes made by American manufacturers, but he has been making constant effort to get colors, and today would buy large quantities of reds if he could get them. As an instance of his inability to obtain these colors, Mr. Ralph referred to the following list of dealers in dry colors, to all of whom he has made frequent appeals for colors during the last two years and from any of whom he would gladly make a purchase at any time:—

Binney & Smith Company, 81 Fulton street, New York; Harrison Bros. & Co., Thirty-fifth street and Grey's Ferry road, New York; John T. Lewis & Bros. Co., 705 Lafayette Bldg., Philadelphia, Pa.; Siemon & Elting, 93 Nassau street, New York; A. Wilhelm Company, Reading, Pa.; H. Kohnstamm & Co., Rosebank, Staten Island, New York; Berger & Wirth, 58 Columbia Heights, Brooklyn, New York; Morris Herrman & Co., 200 Fifth avenue, New York; Ault & Wiborg Company, 57 Green street, New York; A. B. Ansbacher & Co., 527 Fifth avenue, New York; Pfeiffer Color Company, 100 William street, New York; Felix Fezandie,, 205 Fulton street, New York; J. M. Huber, 239 Front street, New York.

Believes There Is Not 1,000 Pounds of Suitable Reds Here.

"I do not believe there are 1,000 pounds of reds in the United States that we could use," said Mr. Ralph, in commenting on the scarcity of the colors he is endeavoring to get.

"The only color we are certain of here is black. We make our greens by mixing blue and yellow, and I am buying all the yellow I want in America, as well as all blacks we use. I do not think I could buy one thousand pounds of reds in America today by paying $3 a pound for it."

Mr. Ralph then took from his window sill two bottles filled with reds, one a German color for which he had paid 35 cents per pound and the other purchased in the open market in this country for $2 per pound, which upon being tested proved to be only 25 per cent. of the strength of the 35-cent German reds. So that, in proportion in strength of the articles obtained, the American product had cost $8 per pound against 35 cents for the German product.

In the Market for American Dry Colors.

"I wish to say to the color manufacturers in America today that if they can furinsh me with dry colors satisfactory to our work, I am in the market for their product. I would not even hold them up to the standard of the German product and would not hesitate to buy at a price very much in excess of what we pay for the German product, because although we have stock on hand sufficient to last, say six months, I will be glad to lay in additional stock against future needs.

"I have not had a single man offer me a pound of red for seven months, and when I receive that offer I will buy what he has.

"As it now stands, if I had to depend upon the American market for colors I would either have to shut down or use a substitute, and that substitute would be black, because I cannot get the reds. We are not only in the market for reds, but also for prussian blue."

Believes It Can Be Produced Here.

Mr. Ralph also expressed his belief that American chemists could produce every pound of color used in the Bureau of Engraving and Printing, and the fact that they are not producing it, he believes, results from their opportunity to make more money in supplying the cheaper colors to the textile trades. He feels confident that they have the ability and access to raw materials necessary for this work.

What the Bureau Requires.

The requirements of the bureau may be judged by the following specifications issued March 9, 1914:—

Prussian Blue—Must be an iron prussiate, free from adulterants and by-products, and must be not inferior in softness, fineness and physical and working qualities to specimen sent bidder. (See general specifications, paragraph 12.)

Bronze Blue—Must be an iron prussiate, free from adulterants and by-products, and must be not inferior in softness, fineness and physical and working qualities to specimen sent bidded; other factors being equal, the color having the highest degree of bronze effect and suitability for typographic printing when ground in varnish, will be preferred. (See general specifications, paragraph 12.)

Red Lake No. 1—Should be a red lake with medium red overtone and crimson undertone; must be equal or superior to specimen sent bidder in brilliancy and must equal or surpass it in resistance to the action of light and atmospheric influences; when ground in plate oil it must possess the same physical properties as the specimen, and must be practically free from coloring matter soluble in oil or water. (See general specifications, paragraphs 12 and 19.)

Red Lake No. 6—Should be a red lake with a metallic pigment base having the general overtone and undertone characteristic of vermilion; must be equal or superior to specimen sent bidder in brilliancy and must equal or surpass it in resistance to the action of light and atmospheric influences; when ground in plate oil, it should possess the same physical properties as the specimen, and must be practically free from coloring matter soluble in oil or water. (See general specifications, paragraphs 12 and 19.)

What the Specifications Call For.

Specification paragraphs 12 and 19 referred to above follow:—

12. Samples of colors, to be accepted, shall closely match the specimen herewith forwarded in both overtone and undertone and in strength of color, and must be equal or superior to it in all other respects, and after acceptance of bid the same requirement will be strictly enforced with regard to material delivered under contract, the sample of the accepted bidder then becoming the standard. It is particularly desired that samples having a greater strength of color shall not be submitted, as no special weight will be given to an excess of color strength in the rating of the samples.

19. Where the specifications require that a color shall contain the least possible coloring matter soluble in water, the degree of bleeding will be determined by the coloration of the filtrate from one gram of the color in 100 c.c. of water after thorough shaking, standing, and filtering for removal of suspended matter.

Experimental Dye Laboratory.

The most interesting feature of the dye situation as it exists in the Bureau of Engraving and Printing today was developed by Director Ralph when he made public for the first time the plan that is to be pursued by the Bureau of Chemistry, of which Carl L. Alsberg is chief, in its establishment of an experimental dye laboratory for which Congress appropriated $50,000. Director Ralph has arranged with Dr. Alsberg to give a practical test to all the colors produced by this laboratory.

Some means for practically trying out the products of the laboratory was at once seen would be essential to its work, and this will be supplied by the bureau and if preliminary tests are satisfactory they will be extended so that American money, postage stamps and other products ot the bureau may in the near future be brought out at least in part by the use of dyes made in this experimental laboratory.

When Dr. Alsberg was seen by your correspondent he wished it made very clear that this chemical laboratory to experiment in the making of dyes is not to be considered as in the same class with the armor plate plant for which Congress appropriated $11,000,000 for the manufacture of armor plate for vessels of the navy. It is essentially an experimental plant.

Location Decided Upon..

Dr. Alsberg has gone so far with his plans as to determine upon the location of this plant, which will be on the government's property in Virginia just across the Potomac River from Washington. The Bureau of Chemistry has completed a series of experiments in respect to products, such as starch, etc., obtained from potatoes so that the work of that kind will now be transferred to the field in various localities. This potato plant furnishes in a very satisfactory way many of the requirements for the dye plant which will be housed in the same buildings and will use the same power, etc.

In these experiments Dr. Alsberg will endeavor to develop the most reliable methods for the manufacture of dyes which will be opened to all manufacturers in the United States. By the experiments that will be made under his direction manufacturing chemists will be saved the expense and labor of trying out different methods and will be able to start in where the Bureau of Chemistry leaves off. So that not only can such manufacturing chemists have the advantage of the best methods that can be developed here for supplying the government, but for supplying the trade generally.

While there is no intention to have this plant in any sense compete with private manufacturers, it is still the purpose of Director Ralph, in case he finds the same difficulty in the future as in the past two years in obtaining these colors, to go to Congress and ask an appropriation for a sufficient dye plant to permanently supply his bureau with the colors it needs, that plant to be established upon the most approved methods that may be developed by the Bureau of Chemistry. The statement of this fact is now publicly made the first time.

Development of Exclusive Color.

Director Ralph also has another project in mind which he hopes may be realized through the experimental work of the Bureau of Chemistry. It is to develop an exclusive color for the use of the government in the printing of its securities, which in respect to color will be similar to the distinctive paper now used by the government in making its paper money. Such a distinctive color may be obtained, Mr. Ralph hopes, through a secret process by which it would be impossible for private enterprises to imitate unless they should accidently stumble across the method of its making, but he would further protect such distinctive color by recommending the passage of a law which would prevent its manufacture or use just as law prevents the use by private persons of distinctive paper upon which government securities are printed.

While these experiments are going on, Director Ralph wishes to spread broadcast the fact that he is now in the market for colors needed in the bureau and would be glad to hear from any one who has such colors for sale.

SECRETARY OF COMMERCE HOLDS UP DYE CENSUS PROOFS AFTER GERMAN PROTESTS

Secretary of Commerce Redfield on Thursday ordered the proof sheets of the census on dyestuffs compiled by the Bureau of Foreign and Domestic Commerce withdrawn from public inspection. They had been a feature of the dyestuffs program of the American Chemical Society convention and were used as the basis of Dr. Norton's address. Secretary Redfield's action was taken after weighing the protests sent to him by New York importers of German dyestuffs and by German manufacturers, who insisted that the tables carried in the census report on dyestuffs revealed important business secrets.

The matter had been put up to the Solicitor of the Department of Commerce in the first instance, and while no announcement has been made at the department, it is understood that he held the department had a legal right to publish the information contained in the census as compiled, all the facts having been taken from the customs offices of the United States. It is believed, however, that the Secretary ordered the witndrawal of the proof sheets from public inspection, which probably will be followed by a modification of the census report, as a matter of policy.

However, when the American manufacturers of dyestuffs take the matter up with the Secretary, should they insist that the information contained in the census to which the importers and German manufacturers are now objecting be retained he may reverse his decision in the matter, it is said.

American chemists are protesting in no uncertain terms against the withdrawal of the data and dyemakers are to appear in force at a hearing soon to be given in Washington.

Telegrams of Protest.

A telegram sent by the Badische Company, 128 Duane street, New York, which is said to have had much to do with influencing the Secretary to order the proof sheets withdrawn from public inspection, reads as follows:—

We respectfully protest against the publication in the census of dyestuffs compiled by Dr. Thomas H. Norton of the detailed and confidential facts of our business. Our documents filed in the custom house have always been considered confidential. See article 1184, Treasury Regulations, of 1915. All legitimate purposes of the census would be accomplished by grouping together the dyes of all the different importers in the United States and giving them total values and quantities. Pending consideration we request immediate withdrawal from public inspection of the proofs at Grand Central Palace, New York. This company is a New York corporation and all the stock is owned by American citizens, residents of the United States.

A telegram of Herman A. Metz, sent to Secretary Redfield, read:—

By what authority does Dr. Norton quote in detail amounts of various products and prices paid for same by importers of dyestuffs? Is not this making public private information obtained from the custom house records unlawful?

Attorney Hardy, on behalf of the Republic Trading Corporation, representing the collective German color importing interests, sent this protest:—

May I ask to be informed whether your official consent to this publication has been secured? If your permission has not yet been secured, I respectfully request that your permission be withheld until the houses I represent have had an opportunity to be heard.

American Makers Demand Information.

Dr. William Becker, chairman of the board of directors of the W. Becker's Aniline and Chemical Works, Brooklyn, whose concern has just completed a plant covering forty acres in South Brooklyn at a cost of several million dollars, said the action of the German interests was resented.

"It is absolutely essential," said Dr. Becker last night, "that the factors engaged in building up the domestic dyestuff and chemical industry have access to the information gathered by Dr. Norton. Millions of dollars have been put into dyestuff and allied plants in this country since the start of the European war. It is now desired to make a survey of the different kinds of dyes actually imported and consumed in America, in order to form a basis for a properly-proportioned industry here."

J. A. Schoellkopf, Jr., of the Schoellkopf Aniline and Chemical Works, the largest color plant in America, with factories in Buffalo, will also file a protest against allowing the German interests to interfere with the publication of the dyestuffs census in its original form. It also was said that the Council of the American Chemical Society would probably come to the aid of the domestic color manufacturers.

After consultation with Dr. Norton, the compiler of the dyestuff census, a statement was drawn up at the exposition, which it was said represented the views of American manufacturers, urging the necessity for the publication of the census wholly unabridged.

"The protests against the publication of the dye census are aimed to prevent the establishment of an Aemrican dyes industry," said Dr. Norton yesterday. "The companies may be American, but they stand for German interests. There is no law which prevents the publication of such information from the customs records as shall not be injurious to American manufacturers."

Why American Dyemakers Protest Cutting Essential Details from Dye Census.

Washington, Sept. 29, 1916.

The views of the American dye industry in respect to the publication in full of the dye census prepared by Dr. Thomas H. Norton, of the Bureau of Foreign and Domestic Commerce are shown in a letter received from a confidential source by the bureau today. This letter is from an eminent authority on the dyestuffs industry and will be given careful attention at the hands of the Secretary of Commerce:—

The custom of the dye trade in this connection is somewhat peculiar and is based upon the inherent characteristics of the color industry. The only branch accustomed, to any extent, to use manufacturers names or symbols in the differentiation of current products is that of pharmaceutical chemistry.

Many dyestuffs appear under different designations or under the same designation under varying marks. It is the practice in the literature and in the trade in colors to append to distinguishing brands, or marks in brackets, the symbols in current use to represent the several makers.

A given color might be handled in trade under the name of Varine F F and be manufactured by two firms. Of essentially the same chemical composition, the two brands are, however, clearly distinguishable by certain physical characteristics of more or less importance in connection with dyeing operations. If the "Badische" or "Sandoz" make the same brand, it is customary to append in brackets the symbol of the maker, as:—"Varine F F (B)" or "Varine F F (S)." The symbols of the makers thus become an integral part of the current trade designation. Without them the census would lose all claim to technical and commercial accuracy.

Without them any intelligent, experienced tinctorial chemist could work out the manufacturing sources of the great mass of the dyes enumerated in our compilation. It would, however, be a job of many days or weeks for each possessor of a copy desirous of having it in shape to furnish complete information at a glance.

The practical value of this compilation is vastly heightened by the presence of these symbols in the case of the dyer. All makers of colors provide expensive manuals of directions for using all colors of their own make. Our census tells any dyer just what manuals he can conveniently employ in connection with every color designation to be found in current American trade.

For the past three days there have been bitter expressions here in New York in regard to the census on the part of those identified with German importing interests. They are intensely anxious to have it suppressed or emasculated that its complete and easy use can be restricted to the utmost degree. They have threatened to use every effort to have the relation of foreign manufacturer to imported products removed from the work. The claim is advanced that there is no legal status for the publication of such data. They, of course, forget that it is a regular practice to allow the publication in American trade journals of the names of consigners or recipients along with quantities, etc., of our current imports and exports. The use of the statistical data afforded by the invoice of foreign goods is limited only by the degree to which public interest may be obviously subserved and clerical assistance may be available

The symbols of manufacturers constitute integral parts of trade designations. Their omission would seriously impair the practical value of the census without preventing private initiative from carrying out the identification of given wares at a considerable outlay of time and effort.

The census removes from the anatomy of the dyestuff industry all matters concealing its material parts and their correlation and interrelation, just as the surgeon's scalpel removes the flesh from a skeleton. The method adopted and that of the surgeon leave the skeleton intact with connecting ligaments.

Our German friends are most anxious that the results of the census should resemble a confused mass of bones—deprived of those descriptive labels—the symbols of the manufacturers concerned—which reduce to a minimum the task of comprehending the essential secrets and complexities of the industry.

Bids for Kerosene and Gasoline for Panama Canal Opened.

Bids were received by the general purchasing officer of the Panama Canal, Washington, D. C., September 23 for furnishing under circular 1079 kerosene and gasoline, as follows:—

Bidder 1, P. J. Constant, 277 Broadway, New York city; bid for Pure Oil Company's regular 150 deg. W. W. oil.

2. Texas Co., New York city.

3. West India Oil Co., 26 Broadway, New York city.

Class 1. 266,000 gls. kerosene—Bidder 1, 17.93c., alt., 45 days; 2, 14.93c., Baume of 44.5, or 12.19c. for 5-gal. cans in new medium export cases, 30 and 45 days; 3, 12.99c., 30 days.

Class 2. 180,000 gls. gasoline—Bidder 3, 24.90c., f. o. b. New York city, shipped in 55-gal. galvanized steel drums, $7 each, New York, 15 days.

X.—WAR-TIME MARKET PRICE STUDIES, FROM AUGUST, 1914, TO OCTOBER, 1916

DRUG MARKET—IV.

The Reporter presents herewith in tabular form the record of prices of seeds, spices and waxes, in the New York markets, for the first of the month of each quarter of the fiscal years covered, beginning with the opening of the European war, and bringing the quotations up to September 30, inclusive, of this year. The eleventh comparison—covering *fifth section of the drug market, the first half of the miscellaneous list*—will appear in the Reporter of October 9.

SEEDS, SPICES AND WAXES.

	1916				1915				1914.
	Oct.	July.	April.	Jan.	Oct.	July.	April.	Jan.	Aug.
Anise, Spanish, lb.	16¼@16½	13½@14	14¼@14¾	12¾@13½	11½@12	12@13	12¼@12¾	11¼@12	10@10½
star, actual weight	22@24	24½@25	25½@26½	*27@30	24@25	20½@21	20½@21	20½@21	19¼@19¾
Levant	12½@13	12½@13	12½@13	11@11½	11@11½	11@11¾	10¾@11½	—@—	*—@—
Italian	14@15	—@—	—@—	—@—	—@—	—@—	—@—	—@—	12@12½
Canary, Spanish	5¼@5½	5¾@6¼	5¾@7	5¼@5¾	5¼@5¾	6¼@6½	6¼@7	6½@7	—@—
Smyrna	7@—	*7@—	*7@—	5¾@7	5¾@7	6½@6¾	7@7½	7¼@8	6@6½
South American	4@4¼	4½@5	5½@6	4¾@5¼	4¼@5¼	4¾@5	6@6½	6½@7	6@6½
Dutch	5@5½	5@5½	5¼@5½	4½@5	6@6½	5½@6	6¼@6½	6@6½	—@—
Caraway	24½@25½	18¼@18¾	16¼@16½	12¾@13	9¾@10¼	10@10½	9¼@9½	8¾@9¼	8@8¼
Cardamoms, bleached	85@1.30	85@1.30	85@1.30	85@1.40	95@1.50	1.20@1.50	1.05@1.50	1.30@1.50	1.30@1.75
decorticated	68@72	68@72	75@80	75@80	85@95	1.15@1.25	1.15@1.25	1.15@1.25	1.15@1.30
Celery	23@25	22@23	34@35	30@31	33@34	16¾@19	18@18½	14@15	17½@18
Colchicum	1.15@1.20	1.05@—	1.05@—	95@1.00	85@1.00	85@1.00	55@60	80@90	20@21
Conium	18@20	18@20	18@20	10@15	10@15	10@15	9@9½	9@9½	9@10
Coriander, natural	8¾@9	5½@6	6@7	4¾@4¾	4¾@5	3½@5¾	4¼@4½	4@4¼	4¼@5
bleached	10@10½	6½@7	7@7¼	5½@6	5½@6	4½@5	5@5½	4½@5¼	5@6
Cumin, Malta	*20@21	*21@24	*23@24	*23@24	nominal	23@24	22¼@23	13¾@14¼	10@11
Mogador	21@22	22½@23	—@—	—@—	20½@21	23@24	—@—	—@—	—@—
Dill	15@16	9@10	8@8½	6¼@6¾	6¼@6½	8@9	7¾@8¼	7¼@7¾	7½@8
Fennel, German, large	60@65	75@—	75@—	1.00@—	40@—	35@40	28@30	18@19	10@12
small	20@—	20@—	20@—	16@20	16@20	16@20	12@14	12@14	8@8¼
French	12@13	15¼@15¾	14@—	12@13	8@—	8@—	7¾@8	10½@11	—@—
Roumanian	18@20	18@20	18@20	15@17	15@17	11@12	15@17	15@17	nominal
Flax, whole, bbl.	9.75@10.00	8.75@9.00	8.50@8.75	8.50@8.75	8.25@8.50	8.25@8.50	8.25@8.50	8.25@8.50	10.00@10.25
Foenugreek	4@4¼	4½@5	4@5	3¼@4	3@3¼	3@3½	3@3½	5@6	3@3½
Hemp, Manchurian	6@6¼	4½@5	4¾@5¼	5½@5¾	3¼@3⅝	2¾@3	nominal	nominal	2½@3
Russian	*6½@—	*6½@—	*6½@—	*5@5½	nominal	3@3¼	3¾@4	3½@4	2½@3
Job's tears, white	6@7	6@7	6@7	6@7	6@7	6@7	6@7	5@6	—@—
Larkspur	20@21	21½@22	25@28	25@28	25@28	28@30	28@30	28@30	25@30
Lobelia	27@28	27@28	22@25	22@25	30@35	30@35	30@35	30@35	25@27
Millet, natural	3.00@3.15	3.20@3.40	3.30@3.50	3.00@3.10	2.90@3.00	2¾@3¼	2¾@3¼	2¾@3¼	1.90@2.20
hulled	6¼@7	6¼@7	6¼@7	6¼@7	7@7½	8¼@9	9¾@10¼	9¾@10¼	4¼@4¾
Mustard, Bari brown	14@14½	15@16	16@17	11½@12	7½@8	8@9	8¾@9	8¾@8¾	6@6¼
California, brown	13½@14½	15@16	15@16	12@12½	9½@10	9@9½	10@10¼	8¼@8¾	5@5½
Sicily, brown	13¼@14	15@16	16@16½	12¼@12½	7¼@7¾	7½@8	10@11	7¾@8½	5¾@6¼
Trieste, brown	—@—	—@—	—@—	—@—	—@—	—@—	—@—	—@—	6@6½
English, yellow	13@14	16¾@17	19¼@19¾	13½@14	11½@12	10¾@10¾	11@12	7½@8	6@6¼
Dutch, yellow	14¼@14¾	16@17	19@19½	13¾@13¾	—@—	—@—	—@—	—@—	—@—
Parsley	21@22	21@22	21@22	21@22	21@22	21@22	21@22	25@—	20@21
Poppy, Dutch	27½@29	28@30	32½@33½	24½@25	13¾@14¼	13½@14	14¼@14¾	13½@14	6¼@6½
India	24@25	20@22	32¼@33½	—@—	—@—	—@—	—@—	—@—	—@—
Russian	25@26	—@—	—@—	—@—	—@—	—@—	—@—	—@—	—@—
Pumpkin	11@11½	11@11½	11@11½	11@11¾	11@11½	11@11½	11@11¼	12@15	12@15
Quince	75@—	75@80	75@80	70@75	70@75	75@80	75@80	65@70	60@70
Rape, English	9@9¼	9@9½	9@9¼	9@9¼	9@9¼	9@9¼	9¼@10	6¾@7¼	5¾@6¼
Bulgarian	8¾@9¼	8¾@9½	8¾@9¼	8¾@9¼	8¾@9¼	—@—	8¾@9¼	—@—	—@—
Japanese	5¾@6¼	6¼@7	6¼@7	6¼@7	6@6½	—@—	—@—	—@—	—@—
Sabadilla	22@24	22@24	20@21	20@21	19@21	19@21	18@20	22@24	15@16
Stavesacre	30@34	45@—	90@—	25@—	25@—	25@—	25@—	22@—	10½@11
Stramonium	10@—	10@—	10@—	10@—	10@—	10@—	10@—	10@—	8@8½
Strophanthus Kombe	2.25@—	nominal	*2.00@2.50	60@—	60@—	60@—	60@—	60@—	40@42
Hispidus	nominal	nominal	*2.00@2.50	50@55	50@55	45@50	45@—	50@—	38@40
Sunflower, large	5¼@6	5¼@6	9¼@11	9¼@11	9¼@11	10@10½	10½@11	7¼@7½	4@4½
small	4½@5½	5@6	6@7½	6@7½	6@7½	6¾@7¼	8@9	5¾@6¼	3¼@4
Worm, Levant	90@1.00	1.00@—	1.00@—	1.30@1.50	1.30@1.50	1.50@—	60@65	55@65	36@38
American	9@10	9@10	9@10	9@10	9@10	10@11	10@11	10@11	9½@10

SPICES.

	1916				1915				1914.
	Oct.	July.	April.	Jan.	Oct.	July.	April.	Jan.	Aug.
Cassia, Batavia, No. 1	20@21	23@24	26@27	20@21	18½@19	18½@19	19¼@20	19@20	18@19
shortstick	16@17	19@20	23@24	*17@18	12½@13	12@13	12@13	12@13	11@12
Batavia, No. 2	15½@16	18@20	*21@22	*18@20	12@13	12@13	12@13	12@13	10@11
No. 1 Saigon rolls	40@41	51@52	65@70	58@60	33@34	33@34	31@32	31@32	28½@29
China, cases	12¼@13	14@15	17@18	12¼@12½	8½@9	8@8½	9@9¼	8@8¼	7¼@7¾
broken, extra	8¾@9	11@12	16½@17	11@12	6@6¼	6@6¼	6¼@6½	6@6¼	5½@5¾
buds	15@16	15@16	19@20	17@17½	13@13½	13@13½	12½@14	12¼@14	11¼@12
Chillies, Japan	22@23	28@29	31@32	35@36	33¼@34	27@28	27@28	19½@20½	14@14½
Mombassa	31@32	34@35	40@42	35@36	26@27	27@28	27@28	21@22	14¼@14½
Cinnamon, Ceylon, No. 1	25@26	28@29	29@30	23@24	22@23	23@24	28@29	28@29	30@31
No. 2	24@25	26@27	27@28	21@22	19@20	21@22	26@27	20@27	29@30
No. 3	23@24	25@26	26@27	20@21	18@19	20@21	24@25	24@25	28@29
Cloves, Amboyna	28½@27	26@27	26@27	*40@—	—@—	—@—	—@—	—@—	26@26½
Zanzibar	18@18½	16¼@17	18@19	20@21	15¼@15¾	15¾@16	17¼@18	17¼@17½	15½@15¾
Penang	35@38	35@38	36@37	34@35	34@35	34@35	34@35	34@35	28½@29
Ginger, Cochin, A, B, C	10@11	11¼@11½	11¾@12	9@9¼	8@8½	8@8¼	7¼@8	7@7¼	6¼@6½
Cochin D	11¼@11½	11¾@11½	11@11½	9@9¼	7@7¼	7¼@7½	6¼@7	5¾@6	5¼@5½
Africa, No. 1	9¼@9¾	9@9¼	11¼@12	9@9¼	7¼@7¾	7¼@7¾	6¾@7	5¾@6	5@5¼
Japan	7¾@8	8¾@9	9¾@10	7¾@8	6¾@7	6¼@6¾	8¼@9	7@7½	5¾@5½
Mace, Banda	64@64	68@70	70@72	64@65	60@61	60@61	63@64	65@66	64@64½
Penang, No. 1	62@63	70@72	70@72	*62@63	*60@61	60@61	62@63	64@65	61@62
Penang, No. 2	58@60	59@60	59@60	52@53	51@52	51@52	53@54	53@54	56@57
Batavia, No. 2	51@52	55@56	55@56	45@46	44@45	45@46	49@50	47@48	49@50
Nutmegs, 105s to 110s	19¼@20	22@23	30@31	18½@19	13½@13¾	13¼@13¾	14½@15	14¼@14½	13½@13¾
75s to 80s	24½@25	30@31	40@42	25@26	15½@15¾	16¼@16½	17@18	16@16¼	15@15¼
grinding	19@20	23@24	30@31	17½@18½	13¾@14	14@14½	14½@15	14½@15	13¼@13½
Paprika, Spanish	16¼@20	16¼@19	16¼@19	15¾@19¾	15¾@19¾	15¾@19¾	6¼@20	—@—	26@29
Hungarian	*50@—	*50@—	*50@—	*50@—	*50@—	*20@22	nominal	—@—	16@19
Pepper, black, Singapore	17¼@17½	17¼@17¾	19¾@20	*16@16½	13¼@13½	13¾@14	14¾@15	11¾@12	11¼@11½
Acheen	16¾@17	17@17½	19¼@19½	*15@15¾	12¾@13	12½@12¾	14½@15	11¼@11¾	10¾@11
Aleppy	18¼@19	18¼@19	20¼@21	17¼@18	13¼@13¾	12¾@13	14½@15	13@13¼	11¼@11¾
Lampong	17@17¼	16¾@17	19¼@19¾	15½@16	14@14½	14¼@14½	14½@15	11¼@11¾	10¾@11
Tellicherry	18¾@19¼	19@19¼	20¼@21	17¼@18	13¼@13¾	12¾@13	15@15¼	13@13¼	11½@11¾
white, Singapore	21¼@22	22@22½	25@26	21@22	18¼@19	20½@21	24@25	21½@22	18¾@19
Penang	21@21½	20¼@21	24@25	19@19½	17¼@18	19¼@19¾	19¼@19½	18¼@18¾	16¼@16¾
Pimento	5¼@5½	4¼@4¾	6@6¼	4½@4¼	3½@3¾	3¾@3¾	4@4½	4@4	4¼@4¼

WAXES.

	1916				1915				1914.
	Oct.	July.	April.	Jan.	Oct.	July.	April.	Jan.	Aug.
Bayberry	21@21½	21¼@23	24@25	22@24	20@21	21@22	23@24	25@27	27@30
Beeswax, white, pure	40@50	47@55	47@55	47@55	47@55	42@45	40@42	45@55	47½@50
yellow, crude	30@34	32@34	32@34	32@34	33@38	30@33	30@37	28@30	39@40
yellow, refined	35@40	36@39	36@39	36@39	33@37	31@35	31@35	30@35	40@41
Candelilla	23@25	23@25	25@30	25@30	25@30	25@30	35@—	nominal	22@24
Carnauba, flor	50@52	50@52	50@52	45@47	45@47	45@47	nominal	50@55	50@51
No. 1	43@44	44@45	47@49	38@40	38@40	38@40	45@50	45@60	45@46
No. 2, regular	38@39	38@40	40@43	33@35	33@35	31@35	40@45	40@45	42½@43
No. 2, N. C.	32@33	32@34	33@35	29@30	29@30	29@30	32@34	38@40	32@33
No. 3	26¼@27	27½@28	28¼@29½	22@23	22@23	24@25	27@28	29@32	33@33½
No. 3, N. C.	26¼@27	27@27½	28@29	22@23	22@23	24@25	25@—	30@33	29@30
Ceresin, yellow	10@14	10@14	10@14	10@14	10@14	10@25	10@25	10@25	12@22
white	14@16	14@16	14@16	14@16	14@16	15@25	15@25	15@25	14@28
Japan	14½@15	15¾@16	17@18	13@—	12¾@13	11¾@12	12¾@15	10¼@11	11@11¼
Montan, crude	*28@30	*28@30	*28@30	*28@30	*24@26	22@24	16@18	9@10	6¼@7½
bleached	—@33	—@33	—@33	—@35	33@35	33@35	nominal	35@40	24@25
Ozokerite, crude, brown	45@60	45@90	45@90	28@40	28@40	28@40	28@40	28@40	21@25
green	80@90	80@90	80@90	*60@75	*50@60	32@36	32@36	32@36	25@30
refined, white	*75@80	*75@80	*75@80	*55@65	*55@65	30@40	30@40	30@40	25@30
refined, yellow	*60@65	*60@65	*60@65	*40@45	*40@45	25@30	25@30	25@30	25@30
Paraffine, crude, 103@105 deg	4@4½	4@4½	3¾@4	3¼@3½	—@—	—@—	—@—	—@—	—@—
118@120 deg	5@—	5@—	5@—	3½@4	2¼@3	2¼@3	2¼@3	3¼@3¼	3½@3¼
124@126 deg	5¼@5½	5¼@5½	4¾@5	3¾@4	3½@3¾	3½@3¾	3½@3¾	3½@3¾	3½@3¾
refined, domestic, 118@120 deg	6¼@7	6¼@7	6@—	3¾@4¼	4¼@4¾	4¼@4¾	4¼@4¾	4¼@4¾	4¼@4¾
125 deg	7¼@—	7½@—	7@—	4@4½	4¾@5	4¾@5	4¾@5	4¾@5	4¾@5
128 deg	8¼@9	8¼@9	7½@—	4¾@5	5¼@5½	5¼@5½	5¼@5½	5¼@5½	5¼@5½
133@135 deg	9¼@12	9¼@12	9@9½	6@6½	6¼@6½	6¼@6½	6¼@6½	6¼@6½	6¼@6½
140 deg	13@—	13@—	—@—	—@—	—@—	—@—	—@—	—@—	—@—
refined, foreign, 125 deg	*6@7	*6@7	*6@7	*6@7	*6@7	4½@4¾	4½@4¾	4½@4¾	4½@4¾
130 deg	*7@8	*7@8	*7@8	*7@8	*7@8	5@5¼	5@5¼	5@5¼	5@5¼
135 deg	*8@9	*8@9	*8@9	*8@9	*8@9	5¼@6	5¼@6	5¼@6	5¼@6
140 deg	*8¼@9	*8¼@9	*8¼@9	8¼@9	*8¼@9	8¼@9	8¼@9	8¼@9	6@6¼
Spermaceti, block	24@25	24@25	24@25	24@25	24@25	24@25	24¼@26	24¼@26	29@30
cakes	35@26	25@26	25@26	25@26	25@26	25@26	25¼@27	25¼@27	30@31

* Nominal.

State Department Conferring on Chemical Drug Shipments from Germany.

Washington, Sept. 29, 1916.

American Ambassador Page, at London, held several conferences with Counsellor Polk of the State Department regarding the obtaining of concessions from the British government for the importation from Germany of several drugs and chemicals which cannot be obtained or manufactured successfully in this country. Arrangements are being made to present several petitions to the trade bureau of the British Foreign Office in the near future.

The office of the Trade Advisors of the State Department is hopeful of success in these new cases in view of the successes regarding the negotiations for the importation from Germany of novocain and salvarsan. The agreement was perfected September 6 for the importation of 1,075 pounds of novocain. About two-thirds of this amount had previously been ordered. The British government said, however, that the permit for this amount was not to be taken as a precedent for future shipment. The question of the supply of salvarsan in this country is believed to have been settled by an agreement under which the chemical firm of H. A. Metz, of New York, will manufacture the drug under a patent license from Farb. Hoechst, of Germany.

NATIONAL PETROLEUM ASSOCIATION AS HONOR GUESTS OF UNION PETROLEUM COMPANY.

It isn't an every day sight to see a company take an entire convention, put them into motor buses and take them away from their business for two hours; then give them a feed that the best hotels in the country couldn't beat, and show them through a plant that's so far ahead of anything of its kind that it has been said of it that it will not be duplicated for years to come.

That's what happened when Mr. Guy Scouler, Western manager of the Union Petroleum Company, decided to invite the oil men to his plant. He waited until the convention of the National Petroleum Association was in session at the Blackstone Hotel, Chicago. He sent out wonderfully engraved invitations, and on the day of the luncheon he swooped down on them with five immense motor buses and a number of touring cars, and took them all out to his wonderful new plant on Western avenue boulevard at Forty-fourth street.

Everybody in the oil business has heard stories of this plant, and most of them thought, "Well, here's another fellow with a new plant; and he's proud of it just the same as a mother would be of a new baby; it's probably like all the rest of the plants." But they certainly were pleasantly disappointed.

This building of the Union Petroleum Company from the outside is in keeping with the beautiful boulevard which it graces. It is set well back on a building line and has a lot of green stuff and shrubbery at its side, and there is space where tennis courts will be built this coming spring for the use of the employes.

Inside you run into just the best and latest devices of every kind that go to make up a modern office, but the real wonders start when you go through the plant itself, from the modern sanitary clean-looking laboratory, where you know that perfect analyses are made, and from there on into the mixing room, and the storage tanks, and the cooper shop. You see on all sides of you evidences of perfect planning.

The cooper shop is very interesting. There are several barrel hoists that work automatically. When the barrel is completed the cooper rolls it over to the barrel hoist which takes it down to the floor below and drops it, and returns for another barrel automatically. This room also has the mechanical hoop driver. Then, there is the device for drying the inside of the barrel with hot air.

The barrel wash room also has some very interesting features. The barrels are scrubbed clean inside and outside by steam, insuring good, clean oil at all times.

WHAT SECRETARY GRANT OF I. O. M. A. TOLD NATIONAL PETROLEUM ASSOCIATION

Secretary Grant, of the Independent Oil Men's Association, prepared for delivery at the convention of the National Petroleum Association at Chicago a carefully balanced analytical discussion of the petroleum industry, with many points worthy of careful attention. Lack of time for the carrying out of the complete program of the N. P. A. rendered it impossible for Secretary Grant to present his address as prepared, and for the benefit of the trade it is published herewith:—

In appealing to others, when you write, preach or talk business, four things are necessary—you must attract attention, be understood, be believed, and have something to say that people want to hear. Almost the first thing in life as a beginning of success is to attract attention. Henry Ward Beecher put up a slave girl in the pulpit of his church and sold her at auction for the benefit of the anti-slavery movement. That attracted attention. The little boy in the story picked up a pin from the floor, got a job, and later owned the business. Picking up the pin attracted attention. A slave set fire to the great temple at Ephesus to attract attention. Very many things have attracted attention to the petroleum business during the last year, and in some respects they have not helped the trade, but brought all connected with it into the limelight in a not very enviable attitude.

Conditions required that many independent refiners and jobbers charge higher prices for their superior products than similar goods could be had of others. This course is always open to criticism from the consuming public. True, the product sold was superior but the buyer was not made familiar with the circumstances and conditions. I believe that if at that time a concerted effort had been made on the part of refiner and jobber to enlighten the public by means of a wide publicity campaign of advertising, that the position might have been better maintained, gallonage retained to a considerable extent, and quality selling very much advanced. Notable instances of this are apparent in two or three cases among your own number, and these could be very easily amplified, but only by co-operation and community work, and this is where organization effort can be profitably employed.

The consumer feels that there are large profits accruing for everybody affiliated with the oil business; they are not at all familiar with the great hazard which is always present, consequently it seems as though one of the important things to be done by the different associations of the oil industry would be to conduct a rational campaign as to facts and conditions covering the industry and have it conclusively shown that unlike other enterprises there is probably less desire to injure the public than is supposed.

The Petroleum Industry.

It is almost idle for me to suggest to you that the petroleum industry is probably one of the most complex, intricate and difficult of any we have knowledge of, and each branch of the trade has its own perplexities and problems.

Producing.

In the production of crude petroleum, I take it that none of us have very much interest except as it proves to be a commodity for barter and trade, and which is a necessity in your business as well as our own, that is, were there no crude oil production there would be no refiners, and consequently no jobbers. The producing end, while hazardous and difficult, presents its own problems, but the chief one as I look back on it, is how to get the highest price for the fluid obtained from the earth and how to give as little in return for the price paid. In other words, the aim of the producer oftentimes is to mix as much water with his crude as he possibly can get away with, though in some cases he extracts some of the lighter gases, thereby reducing the value of his product from a refining standpoint.

It has been said that after a man once strikes oil something seems to impregnate his constitution which makes him a keen and aggressive business man with possibly less scruples than the average man of business. However this may be, it is his problem and it is your problem—in which fortunately the jobber has little concern, although if the different elements of the business were better known each by the other it seems to me it would go a long way toward clearing away so many of the mysteries which are rising constantly between the different branches creating many misunderstandings.

Refining.

The art of refining crude petroleum while not new has only recently taken on the aspect of what might be rightly termed a "fine art." I remember having come in contact with old-time refiners who were satisfied to erect small stills of from five to ten barrels capacity, skim off the light oils, burn the balance, and run them off sufficiently often to accummulate a stock and then go on the road and sell that stock at a profit. That is the way it used to be done in the early stages of the industry, and really those conditions have existed almost up to the present in the different oil territories of this wonderful oil producing country; that is, similar methods were applied only on a larger scale, but precedent was invariably followed and the trade traditions were passed up from generation to generation. It only has been within the past five years, I may say, that anything like scientific endeavor has been applied to the refining industry, and today no refiner can exist profitably for any length of time unless he has a technical education and is willing to experiment in order to determine the greatest value to be derived from the different methods of separating the crude into its constituent parts.

We have heard many stories of the running of gasoline down the creeks and rivers adjacent to refining plants, and how fuel oil and residuum were considered of little value, but all of this is an economic waste which has been stopped to a great extent, and which must be done away with entirely so that the business may be made more stable and profitable, and appliances must be invented to consume that part of the whole which is still sold at a loss. It seems almost absurd to realize that refiners are compelled to buy raw material out of which only about 50 per cent., and in some cases only 25 per cent., is sold at a profit. Past conditions in the refining business remind me of a story:—

It is related of an old colored Georgia Baptist preacher, that one morning being at the house of one of his parishioners, he was awakened by the women in the kitchen singing very sweetly "Abide with Me." He lay there dreaming on the piety of any one who could sing so beautifully.

At the breakfast table he reminded her of her vocal efforts and what a beautiful character, and how pious she must be. The old lady laughed and exclaimed, "Why, sakes alive, Brother Jackson, that's the hymn I boils eggs by, three verses for soft and five for hard." To some extent that exemplifies the old-fashioned method of refining which is now obsolete and revised by very many of the most up-to-date plants. It is no longer possible to boil oil by hymn singing—beside the practical experience we must have as much scientific information as it is possible to acquire, and even then results are not always what are expected. This is true to a greater or less extent not only in the refining business, but in the jobbing business, and is getting to be more and more appreciated as the great demand for all petroleum products increases and multiplies.

Internal Combustion Engines.

During the past five years, owing to the excessive development of the internal combustion engine as it pertains to all phases of our national life, enormous quantities of naphtha and gasoline have been demanded by the consumer until together, without going into figures, which are always uninteresting and of which you know as much as I, the demand for gasoline has increased by leaps and bounds. The best minds, both within and without the oil business, have been trying to develop a process through which they could convert a larger percentage of light gases into this volatile product, until I venture to predict that within five years, or ten at the outside, at least 75 per cent. of the crude oil produced will be used in internal combustion engines and 25 per cent., less the distillation loss, will be converted into lubricants which will lubricate the mechanism of these fast multiplying contrivances. Probably this view is extreme, but based upon past experiences it is not too much to imagine.

Improved Refining Processes.

The different improved refining processes which have come into existence within the past few years have only been satisfactory in a measure, some of them have been entirely worthless, while others have been fairly successful while gasoline and naphthas were high in price, and of little value when the price declined, because of the excessive cost of doing something which might be termed abnormal. Of course in chemistry nothing is abnormal, in fact chemistry itself might be called an abnormal science, but it is a very grave question as to whether this method of super distillation is going to be the logical way of meeting such a situation. I am firmly of the opinion that it is not, that only by some modification of existing machinery will the refining business be saved and safeguarded. With this idea in view the Independent Oil Men's Association for the good of the cause has made special investigations and advertised extensively for methods and appliances which would burn or consume profitably the lower products of petroleum, such as kerosene, distillate, and fuel oil. It does seem almost criminal that fuel oil containing so many of the ingredients necessary to internal combustion engines should be allowed by the government to compete with coal as it does in many parts of the country, and even now the Secretary of the Interior has advised that some means be devised to regulate and prevent this economic waste. In answer to these advertisements and by reason of our interest we have had many propositions submitted to us for examination and approval.

We have formed what is known as a "Gasoline Relief Committee," which consists of members of this association—both refiners and jobbers, and this committee has appointed a sub-committee consisting of a recognized mechanical expert, a chemical expert, and a commercial expert, to investigate these various propositions, discard those of no value and to give publicity and encouragement to those which will be of value in bringing about better conditions.

Using 42-44 Distillate Instead of Gasoline.

One came to our attention during the past week, being an invention by a well-known local inventor of more than local reputation, whereby he has devised an engine which will increase three-fold the developed horse power as compared with those in use at the present time, and more power, more success, and better results are obtained from 42-44 distillate than from 60-62 gasoline. This machine, while being covered by letters patent in all civilized countries of the world, has not yet been entirely perfected or the knocks sufficiently eliminated to be able to speak positively, but within 60 days it is promised that this will be accomplished, and when it is brought to such a state where its success is beyond question, your business and ours will be vastly changed and greatly improved. Price of gasoline and naphtha will come down, price of burning oils and fuel oils will rise, and the farmer, the greatest customer the oil man has today, will be able to do twice the work with half the effort and do it more conveniently and more profitably. Only today we are told that in France, by reason of the decimation which has overtaken that country and where men are bound to be scarce in future, small two and three tracts are being thrown together and instead of hand labor the farm tractor is taking the place of men who have been killed through the ravages of war. This is bound to take place in all European countries, while our own farmers have been waiting impatiently for some time and putting up with a machine which was neither satisfactory to the customer nor to the manufacturer, and it is along this line, in my opinion, that the greatest advance is to be made. We are doing everything possible to bring about such a condition, as it not only benefits you but ourselves also.

Jobbing.

In the distribution of petroleum products new problems no less intricate or difficult present themselves and it is only by the greatest of diligence and effort that the jobber of oils is able to make a showing and do business on a profitable basis. In this branch of the trade illegitimate practices and methods have developed from time to time, and in some respects probably our own people have been guilty occasionally, but these are rapidly being disposed of or regulated by the Federal Government, and I look to see the time not very far hence when correct practices will be sanctioned and illegitimate methods frowned upon and the sooner we take the attitude of endeavoring to banish all questionable methods from our work the sooner our ideals will be realized.

Probably in no line of business is the competition more fierce than in the distribution of petroleum oils, and yet in spite of all the difficulties and of all the competition, both legitimate and illegitimate, I venture to say there are fewer failures among the distributors of oils than in almost any other line of trade, which speaks volumes, not only for their ability and competency, but for their adaptation to acute and abnormal circumstances. The jobber has his price at which he must sell [illegible] for him largely by his competitor, the same as you have your price of raw material fixed for you by your competitor. This makes the business of both branches entirely different from any other I am aware of at the present time and is often the means of creating discord and dissatisfaction. Where a large company is able to produce, refine and distribute, the policy of making the profit as far remote from the consumer as possible is employed, and this is logical and reasonable, the idea being that those on the firing line, who are the marketers, are apt in some cases to concede a portion of their profits to their customers for the sake of making a sale, which really is impolitic to say the least. However, where the three branches of the business are handled by one company—either the refining or producing make the profit and stockholders are satisfied. Where the different branches are in the hands of several interests, as in the case of the independent oil men of this country, each branch must make its separate profit, and this is largely the cause of so many of our troubles.

Association Work.

In line of progress and development of all human enterprises, the work of the different associations has been developed to a very great extent. Your association, of which I have had knowledge for a good many years, has succeeded in doing a large and valuable work for its different members and doing it better than they could have done as individuals. This is always the case, and I take it that it is useless to justify or defend organization work. Heretofore I have had opportunities of getting close range views on the different departments of the trade, and I know in many cases of the feeling and disposition of the several branches, first of one branch to be selfish and headstrong, and then the other when the opportunity presented, and possibly on account of my inexperience and on account of the various opportunities I have had in trying to absorb the different viewpoints, am I able to suggest to you something which may be enlightening and of value.

Let me say at the outset that no association can hope to succeed unless it is conducted along legitimate, conservative, and fair lines, with the object of giving to each of its several members value received for the money paid. When this is done there is no question but what results will be obtained, and there are so many things to be done that it is some times perplexing to know just which is the most important and which should be done first. Up to this point each of the different branches of the trade having their own organizations have probably unconsciously been the means of encouraging all kinds and species of selfishness. Possibly this has been necessary, but it seems to me now that the time has arrived when more co-operation and corelation should be exercised in order to get the greatest good to the industry as a whole. If you are able by legitimate means to reduce the price of your raw material, while you are most benefited yet the jobber is also benefited, and the consumer as well. Anything that can be done to benefit the refiner indirectly affects the whole business structure, and with the idea of co-operation thoroughly in mind it seems as though a new phase of organization work were very necessary.

In my short experience in work of this character I have had the very hearty co-operation of all the several associations with which we

are connected, and I know this will be given in the future in even a more ungrudgingly measure than it has been in the past, and if this is done we will be able to build up such a united organization as will save large sums to our respective departments and be the means of making business more pleasant and certainly more profitable.

Serious Problem Year for Jobbers.

During the past year the jobber, due to conditions over which he had no control and many of which were providential, has had a very serious problem to solve. It has been solved by him in very many different ways and normal conditions are once more in plain view, but there has always been a more or less strained feeling said to exist between the several branches of the trade. This should be done away with, and it is one of our aims to bring about a more harmonious relationship. The independent refiner is necessary to the independent jobber and the independent jobber is absolutely essential to the independent refiner.

It is difficult for a successful producer to become an expert refiner and an expert refiner is seldom a successful marketer, consequently the indpendent jobber is the one outlet on which the independent refiner must depend, and by reason of strenuous conditions over which we have little control in many cases bad feeling is developed and crimination and re-crimination thrust back and forth as advantage and disadvantage ebbs and flows. This should be eliminated, the producer should be fair in dealing with the refiner, the refiner should be reasonable in dealing with the jobber, and when this desired end is accomplished, organization work will be more rapidly advanced and our aims and ideals more nearly realized.

Oil Shipments from Tampico for Month of August.

Washington, Sept. 29, 1916.

The month of August was a banner month for oil shipments from Tampico, Mexico, according to reports just received by the Bureau of Foreign and Domestic Commerce from that port.

The amount shipped to the United States from Tampico was 1,502,238 barrels; in barrels from Tuxpam, 612,844 barrels, making a total of 2,115,082 barrels to the United States. To South America, Mexico and the United Kingdom, total shipped from Tampico was 1,661,870 barrels; in barrels from Tuxpam, 1,201,069 barrels, making a total of 2,872,933. The total amount sent to the United Kingdom was 74,492.

Besides being a banner month for oil shippers, August was unusual for the number of accidents and the financial losses in which the industry was involved at Tampico. The East Coast Oil Company lost two 55,000-barrel tanks by fire, caused by lightning. Early in the month oil barges belonging to the Panuco Transportation Company and subsidiaries of the Texas Company, were left high and dry by the receding waters of the river after flood tide. Shortly thereafter, another freshet carried two other barges of the same company from the control of tugs having them in tow, with the resultant collision with barges of another company which were engaged in loading tank ships in mid-stream. Material damage was done to all the craft concerned and considerable oil was lost. The same company lost by fire two loaded barges containing about 10,000 barrels of crude oil. Finally on August 28, lightning struck a full 55,000-barrel tank on the Texas property, setting it afire and totally destroying it.

Canada Increases Use of American Gasoline.

Toronto, Sept. 29, 1916.

The consumption of American gasoline in Canada this year has been greater than ever before. To date the amount used is 25 to 30 per cent. larger than last year. In an average year the consumption in Canada is about 60,000,000 gallons. With an increase of 25 per cent the consumption this year will be about 75,000,000 gallons. Throughout the period of high prices gasoline has been cheaper in the Province of Ontario than elsewhere.

For purposes of comparison with Canadian prices the imperial gallon must be used as a basis. This is one-fifth larger than the wine gallon, and would bring the American price to 27.6 cents per gallon. To this must be added the duty of 2.5 cents per gallon and freight to the amount of 1.25 cents per gallon. This would bring the cost of Canadian gasoline to 31.35 cents per gallon ex tank to garages. The war tax of 7¼ per cent is also levied. There are indications that present prices will go down as a result of poor weather and the increased production of crude oil.

How Russian Fuel Oil Will Be Distributed During Year 1915-1916.

London, Sept. 21, 1916.

The petroleum section of the Russian Fuel Committee has completed its investigation of the distribution of liquid fuel for the year 1916-1917. The quantity of liquid fuel for disposal for domestic consumption for the year is estimated at 397,000,000 poods (not including the quantity of fuel to be consumed on the fields and in the refineries).

This fuel will be distributed from May 1, 1916, to May 1, 1917, as follows:—

	Poods.
Navy	20,000,000
Commercial sea fleet	17,000,000
River fleet	52,000,000
Railways	151,000,000
Factories, works and other consumers	159,000,000
Total	397,000,000

Drawback Allowance on Cork Discs.

Washington, Sept. 29, 1916.

Drawbacks on imported cork discs exported after having been bleached and waxed are allowed on bleached and waxed discs imported on and after August 8, 1916.

NATURAL GAS USED IN UNITED STATES IN 1915 AMOUNTED TO 628,578,842,000 CU. FT.

More Than Thirty-seven Billion Cubic Feet in Excess of Best Year Previously Recorded—Average Price Was 16.12 Cents a Thousand.

Washington, Oct. 2, 1916.

Statistics just completed by the United States Geological Survey show that more natural gas was used in the United States in 1915 than in any other year. The quantity used was 628,578,842,000 cubic feet, which exceeds by nearly 37 billion cubic feet, or 6 per cent., the former record, established in 1914.

The average price of this gas at the point of consumption was 16.12 cents a thousand cubic feet, and its total market value was $101,312,381, a gain of 0.22 cent in unit price and of $7,196,857, or 7.6 per cent., in total value, compared with the figures for 1914.

Credit for the increased production of natural gas belongs, in the order given, to Ohio, Oklahoma, West Virginia, Pennsylvania, Kansas, and California, which together produced nearly 40 billion cubic feet more in 1915 than in 1914. Significant increases, important locally but unimportant as affecting the production of the entire country, were credited to Arkansas, Wyoming and Missouri.

The increases in the yield of gas may be attributed, in Ohio, to the remarkable success of drilling in the Cleveland gas field, Cuyahoga county; in Oklahoma to a decided expansion of the local casinghead-gasoline industry and to a greater utilization of the vast reserves of gas in the Cushing district; in West Virginia to increased demand for this ideal fuel from sources outside the State; in Kansas to the continued development of the Augusta gas field, in Butler county, and in California to expanding markets in the southern part of the State and to increased use of casinghead gas for making gasoline.

The principal beneficiaries of the increased production of natural gas were, in the order named, Pennsylvania, Oklahoma, Ohio, California and Kansas, which together consumed nearly 38 billion cubic feet more in 1915 than in 1914.

Of the total production of natural gas in 1915, it is estimated that 217,202,943,000 cubic feet, or 35 per cent., was distributed to 2,156,681 domestic consumers at an average price of 28.32 cents a thousand cubic feet, and that the remaining 65 per cent. was distributed to 18,358 industrial consumers at an average price of 9.7 cents a thousand. Compared with the corresponding statistics for 1914 these figures indicate, with regard to the gas supplied to domestic consumers, gains of 7 per cent. in quantity, 6 per cent. in the number of consumers, and 0.28 cent in average price; with regard to the gas supplied to industrial consumers, gains of 6 per cent. in quantity, 3 per cent. in the number of consumers, and 0.12 cent in average price. The percentage of the total quantity consumed for domestic purposes was slightly greater in 1915 than in 1914.

NATURAL GAS IN THE UNITED STATES IN 1915.

State.	Produced: Quantity (M cubic feet).	Produced: Cents per M cubic feet.	Produced: Value.	Consumed: Quantity (M cubic feet).	Consumed: Cents per M cubic feet.	Consumed: Value.
West Virginia	244,004,159	14.86	$36,424,263	94,976,705	7.85	$7,451,003
Pennsylvania	113,691,690	18.59	21,139,605	176,367,225	17.06	30,087,667
Ohio	70,510,062	21.87	17,391,060	†46,724,969	21.74	31,960,764
Oklahoma	87,516,753	10.51	9,196,804	*65,491,366	7.70	5,058,526
California	21,891,035	18.59	4,069,004	21,891,035	18.59	4,069,004
Kansas	27,045,908	14.93	4,037,011	†48,871,295	16.73	8,174,289
Texas	13,323,747	19.47	2,593,873	13,323,747	19.47	2,593,873
New York	7,976,985	29.27	2,335,252	18,776,400	30.23	5,676,097
Louisiana	25,540,392	8.47	2,163,934	‡25,540,392	8.47	2,163,934
Indiana	2,260,733	30.76	695,380	4,519,244	34.13	1,542,604
Kentucky	1,667,423	36.88	614,998	7,746,353	25.08	1,942,423
Illinois	2,690,593	13.02	350,371	§2,690,593	13.02	350,371
Arkansas, Alabama, Wyoming, Colorado, Montana, South Dakota, North Dakota	*1,022,308	19.93	203,728	1,022,308	19.93	203,728
Missouri, Michigan, Tennessee, Iowa	347,397	17.96	62,398	347,397	17.96	62,398
	58,132	44.40	25,809	58,132	44.40	25,809
	27,645	27.97	7,731	27,645	27.97	7,731
	2,060	73.30	1,510	2,060	73.30	1,510
	1,600	25.00	400	1,600	25.00	400
	250	100.00	250	250	100.00	250
	628,578,842	16.12	$101,312,381	628,578,842	16.12	$101,312,381

* Includes gas piped from Oklahoma to Missouri.
† Includes gas piped from Kansas to Missouri.
‡ Includes gas piped from Louisiana to Arkansas and Texas.
§ Includes gas piped from Illinois to Indiana.
° Includes gas piped into Arkansas from Oklahoma.

CASINGHEAD GASOLINE OUTPUT IN 1915 SHOWS INCREASE OF 22,712,033 GALLONS

Gain of 53 Per Cent. Over Quantity Marketed in 1914—Daily Plant Capacity Increased 30 Per Cent.

Washington, Oct. 2, 1916.

Statistics just completed by the United States Geological Survey, show that the year 1915 was one of decided expansion for the casinghead gasoline industry. The quantity of raw gasoline extracted from natural gas and sold in that year amounted to 65,364,665 gallons, a gain of 22,712,033 gallons, or 53 per cent., over the quantity marketed in 1914. The average price received for the unblended product at the sources of production was 7.9 cents a gallon, and the market value of the entire output was $5,150,823, a gain of 0.6 cent in average unit price and of $2,044,-914, or 66 per cent., in total market value, compared with 1914.

The volume of natural gas utilized in the manufacture of this quantity of gasoline, exclusive of that recovered as drips from gas mains, is estimated at more than 24,000,000,000 cubic feet, and the average recovery of gasoline per thousand feet was 2.57 gallons.

The number of plants for the manufacture of gasoline from natural gas increased from 386 at the beginning of 1915 to 414 at the end of the year, a gain of only 7 per cent., but the combined daily capacity of the plants increased from 179,353 to 232,336 gallons, about 30 per cent., as a consequence of the fact that many of them operated during only a part of 1914.

The following table shows the distribution of casinghead gasoline produced in the United States in 1915.—

GASOLINE EXTRACTED FROM NATURAL GAS AND SOLD IN 1915.

State.	Number of plants.	Quantity (gallons).	Value.	Average recovery of gasoline per 1,000 cubic feet (gallons).
Oklahoma	63	31,665,991	$2,361,029	3.60
California	20	12,835,126	975,397	1.60
West Virginia	114	*10,853,608	927,079	2.30
Pennsylvania	139	*5,808,597	569,873	2.73
Ohio	50	2,198,715	167,138	2.80
Illinois	16	1,035,204	80,049	2.29
Texas, New York, Louisiana, Kansas, Colorado, Kentucky	12	*877,424	70,258	1.32
Total	414	65,364,665	$5,150,823	2.57

*Includes gasoline resulting from natural condensation in gas mains.

EIGHT MONTHS' EXPORTS OF MINERAL OILS.

Washington, Sept. 29, 1916.

Following are the totals of the exports of mineral oils from the principal customs districts of the United States, showing totals for August and for the eight months ending August 31:—

Exports by groups.	August 1916.	August 1915.	8 months ending August 1916.	8 months ending August 1915.
Crude oil—				
Gallons	17,978,132	15,119,217	112,295,990	107,016,954
Dollars	763,272	370,872	4,983,534	2,767,888
Illuminating oil—				
Gallons	73,922,852	80,239,892	548,641,394	575,582,949
Dollars	5,077,820	4,889,781	37,118,690	34,382,169
Lubricating oil—				
Gallons	27,457,423	22,715,614	180,822,794	164,282,758
Dollars	4,733,498	2,936,820	29,139,569	21,446,848
Gasoline, naphtha, etc.—				
Gallons	41,936,846	29,207,581	236,959,148	186,431,840
Dollars	8,809,909	3,401,358	45,063,439	21,106,462
Residuum, fuel oil, etc.—				
Gallons	88,988,976	84,921,710	600,775,969	489,570,269
Dollars	2,596,343	2,385,042	16,599,914	13,099,206

SEVEN MONTHS' EXPORTS OF MINERAL OILS GREATER

Increase of 38,700,000 Gallons for July Over July, 1915, and of 142,550,220 for Seven Months' Period Over Last Year.

A gain of 38,747,108 gallons in the exports of mineral oils for the month of July over July, 1915, and again of 33,378,810 gallons over June, 1916, is shown in seven months' report of the exports of mineral oils from the principal customs districts in the United States, as made up by the Bureau of Foreign and Domestic Commerce.

The seven months' figures show 1,429,-210,976 gallons total exports in 1916, an increase of 142,550,220 gallons over the same period of 1915, and an increase of 81,037,437 gallons over the seven months ending in July, 1914.

Crude.

	July, 1916 Gallons.	July, 1916 Dollars.
New York	102,213	10,214
New Orleans	1,519,560	150,817
Arizona	84,060	3,360
Southern California	36,773	914
Washington	48,458	1,020
Buffalo	53	3
Dakota	1,178,102	22,560
Michigan	6,308,286	258,102
Ohio	1,246,168	44,497
Total, July 1916	10,523,619	491,523
1915	11,327,922	202,323
Total, 7 months, July—		
1916	94,317,777	4,220,262
1915	87,897,737	2,397,014
1914	67,548,588	2,971,219

Illuminating.

	July, 1916 Gallons.	July, 1916 Dollars.
Maryland	14,821	1,730
New York	39,354,341	2,897,408
Philadelphia	8,785,500	505,751
New Orleans	9,437,427	472,027
Sabine	9,515,695	623,997
Arizona	205	45
San Francisco	4,858,050	230,206
Southern California	1,367	259
Washington	3,132	348
Buffalo	132,844	7,920
Dakota	37,290	1,853
Ohio	9,140	435
Total, July, 1916	72,140,821	4,742,069
1915	79,035,922	4,538,903
Total, 7 months, July—		
1916	474,718,542	32,040,870
1915	495,323,057	29,492,388
1914	651,296,156	42,172,501

Lubricating and Paraffine.

	July, 1916 Gallons.	July, 1916 Dollars.
Maryland	980,433	159,791
New York	16,441,522	2,816,564
Philadelphia	7,090,824	949,858
Galveston	15,472	1,238
New Orleans	125,431	33,546
Sabine	97,156	19,431
Arizona	4,267	1,041
San Francisco	480,316	68,076
Southern California	248	100
Washington	166,548	32,821
Buffalo	193,619	33,423
Dakota	50,143	11,754
Michigan	29,373	7,702
Ohio	8,297	666
Total, July, 1916	25,692,649	4,135,948
1915	24,745,533	3,278,588
Total, 7 months, July—		
1916	153,365,371	24,386,071
1915	141,567,144	18,510,028
1914	111,711,335	13,285,202

Naphthas, Gasoline, Etc.

	July, 1916 Gallons.	July, 1916 Dollars.
Maryland	2,093	471
New York	14,667,651	2,790,415
Philadelphia	14,022,137	2,837,008
New Orleans	8,049,245	1,755,775
Sabine	8,128,574	1,469,146
Arizona	2,856	780
San Francisco	1,946,255	415,880
Southern California	7,491	912
Washington	129,138	21,782
Buffalo	227,988	34,970
Dakota	356,125	64,885
Michigan	245,772	48,366
Ohio	71,917	12,948
Total, July, 1916	47,857,244	9,450,465
1915	23,471,978	2,545,900
Total, 7 months, July—		
1916	195,022,502	36,253,530
1915	157,224,259	17,705,104
1914	110,242,636	15,474,443

Residuum, Gas Oil, Fuel Oil, Etc.

	July, 1916 Gallons.	July, 1916 Dollars.
New York	4,292,791	211,486
Philadelphia	330,884	16,003
New Orleans	3,469,359	123,777
Sabine	45,933,960	1,459,987
Arizona	610,083	24,674
San Francisco	36,946,110	733,393
Southern California	2,437,102	49,746
Washington	754,080	14,083
Buffalo	146,902	6,283
Dakota	51,164	1,733
Michigan	2,927,142	89,593
Ohio	411,180	16,858
Total, July, 1916	98,119,466	2,747,596
1915	77,014,336	2,146,206
Total, 7 months, July—		
1916	511,786,984	14,003,571
1915	404,648,559	10,714,164
1914	398,374,824	10,578,802

Total Mineral Oils.

	July, 1916 Gallons.	July, 1916 Dollars.
Maryland	1,006,349	161,992
New York	74,858,518	8,726,087
Philadelphia	30,229,345	4,308,620
Galveston	15,472	1,238
New Orleans	22,601,928	2,535,942
Sabine	63,675,385	3,572,561
Arizona	710,411	29,900
San Francisco	44,230,731	1,445,645
Southern California	2,482,981	51,931
Washington	901,365	70,054
Buffalo	701,100	81,706
Dakota	1,672,324	102,821
Michigan	9,510,573	403,763
Ohio	1,746,711	75,341
Total, July, 1916	254,342,799	21,567,601
1915	215,595,991	12,711,950
Total, 7 months, July—		
1916	1,429,210,976	110,904,304
1915	1,286,060,756	78,818,698
1914	1,349,173,589	86,482,167

Western Seed and Oil Markets

MINNEAPOLIS.

Minneapolis, Minn., Sept. 27, 1916.

There was a little more zest to the flaxseed market during the past week and stronger competition for the daily offerings resulted in better premiums being paid for the choice seed. At least one more crusher came into the market and this increase in the call for supplies was the beginning of a stronger undertone. The quality of the run was uneven. Some days practically all of the seed came from Montana and North Dakota, while on other days there was quite a sprinkling of poorer Minnesota and South Dakota offerings. Some of the North Dakota and Montana was taken on previous sales made to arrive and none of it was allowed to go begging.

There was considerable trade in seed to arrive during the past few days. There was a good demand for choice seed on that basis and anything offered from territory that ships good seed was taken without hesitation and at good prices compared with spot seed values. Today there were 12,000 bushels sold to arrive. Daily offerings have varied, but the total for the week was rather liberal.

There was no seed in from Canada for spot sale and none was offered to arrive. The difference at present is not strong enough to make it profitable to ship seed over the line.

Crop news varied this week again. A number of Montana reports of light yields came to hand and this brings down the average yield for the Northwest. Some of the Montana fields yielded but three bushels to the acre. The opposite extreme was noted in further North Dakota reports of yields running 12 to 18 bushels to the acre. The trade is figuring on an average yield of about 10 bushels to the acre, which is above normal and presages a good crop. News received here from Canada was pessimistic. According to these advices considerable of the Canadian crop was frozen and will not be worth much. There is no feeling around for a market for Canadian seed and no bids have been asked for as yet.

The total of receipts at Duluth and Minneapolis was considerably above that of last week, but considerably below that of last year. Line elevator companies seem to have little to say regarding the country movement. Scattered selling by the farmers is the general news, with no disposition shown to unload freely at present prices. Most of the harvesting is out of the way and it is safe to say that only a small amount of flax will be carried over for spring threshing if there is any at all. Whether conditions have not been of the best, but the farmers managed to get in some good licks in threshing when the situation was favorable. The lack of demand for wheat threshing this year helped in the matter of flax threshing.

The futures market was influenced largely by the Argentine news, which was bad. Canadian news was also a factor in the situation. The amount of flaxseed on passage from Argentina was somewhat of a dampener as far as the development of a real bull market was concerned, but there was a good strong undertone almost daily.

Local elevator stocks increased very slightly, but there has been a steady crushing demand for the bulk of the daily offerings and most of the seed has been going direct to the mills for immediate crushing. The continued buying of seed by a scalper probably accounts for the addition to the elevator stocks. Duluth stocks decreased sharply.

LINSEED OIL.

The advance in prices interfered with the demand for linseed oil of late. Buyers took small lots and did not show an overweening desire to book ahead for even their nearby requirements. In fact it looks as though they are holding back as much as possible, waiting for the new crop to move. So far there has been no news to indicate a free and liberal movement of the new crop to bring any depression in the market. The supply of oil on hand here continues very light and there is no opportunity to increase stocks because of contracts maturing right along that take about all of the oil the crushers can make out of the meager receipts of seed. Shipping directions on maturing contracts are prompt. There are practically no old contracts to fill as the buyers have been short of oil most of the season on account of the high prices and have been very willing to take care of contracts that have made from time to time. The general situation is rather quiet as far as new business is concerned, but considerable oil is being shipped. The movement is about up to that of a year ago, when prices were very much lower.

There is no interest in deferred oil to speak of. Buyers continue to inquire for prices right along, but they will not jump into the market and make any deals of importance. A week ago they showed no willingness to accept prices at a reasonable basis to make season's contracts and this week the level is still higher. Crushers do not seem to be very anxious to trade in deferred oil because of the news concerning the flax supply to come, though there is no lack of demand for by-products on which to make safe estimates for shipment most any time up to to the turn of the year.

The jobbing trade is steady and perhaps a little better than usual. Jobbers are still very prompt in taking care of their contracts, though they show no disposition to enter into new ones.

Oil is quoted around 70c.

LINSEED OIL MEAL.

The limited output of meal was well taken during the past week and prices held firm for spot and nearby shipment. Some of the crushers are not turning out enough meal to take care of the demand from their regular customers and they are dividing their output among the buyers. There is still a very good demand for oil cake. Any time the crushers might get stuck for meal orders they can sell cake. Shipping directions are prompt, as buyers have been working on light stocks and there is constant need of replenishment. Millfeed prices dropped a little last week, but this week they are strong again. There is some contracting for forward shipment at discounts under spot values and there seems to be a fair demand for deferred. Prices for spot quoted around $36 and for October and November shipment around $35.

LINSEED OIL CAKE.

There was a steady inquiry for cake during the week, but no large amount of trade developed because of the lack of supplies to offer for shipment right away. Buyers continue to ask for future delivery, though there is some difference of opinion as to values that should prevail. Most of the local business is done through exporters and the matter of the freight situation is of little concern. Prices quoted at $39 New York. There is a steady movement to the seaboard on old and maturing contracts and there is no chance of an accumulation here for some time to come.

Daily closing prices of seed at Minneapolis, for the week ending September 27, 1916, and for the same week last year:—

	1916 Cash.	1916 Arrive.
Thursday	$2.08¼@2.10¼	$2.05½@2.00½
Friday	2.12 @2.16	2.11 @2.15
Saturday	2.14 @2.18	2.13 @2.17
Monday	2.12 @2.16	2.11 @2.15
Tuesday	2.11 @2.15	2.10 @2.14
Wednesday	2.16 @2.20	2.15 @2.19

	1915 Cash.	1915 Arrive.
Thursday	$1.40¾@1.45¾	$1.40¼@1.45¼
Friday	1.40 @1.45	1.40 @1.45
Saturday	1.40 @1.45	1.39½@1.44½
Monday	1.40 @1.45	1.40 @1.45
Tuesday	1.40¼@1.45½	1.40¼@1.45½
Wednesday	1.40½@1.45	1.40½@1.45

Daily receipts of domestic seed for the week ending September 27, 1916, and for the same week last year, in bushels, were:—

	Duluth 1916.	Duluth 1915.	Minneapolis 1916.	Minneapolis 1915.
Thursday	....	435	13,000	17,220
Friday	55	....	11,000	11,070
Saturday	61	556	16,000	3,690
Monday	4,176	54	31,000	46,740
Tuesday	....	2,095	9,270	12,800
Wednesday	....	....	14,420	12,800
Totals	4,292	3,140	94,690	104,320

Total receipts of seed for the crop year, September 1, 1916, to September 23, 1916, at Chicago, Duluth and Minneapolis, and for the corresponding period a year ago, in bushels, were:—

	1916.	1915.
Chicago	174,000	261,000
Duluth	20,836	8,899
Minneapolis	146,000	240,690
Totals	340,836	510,589

Shipments of linseed oil and linseed oil cake and meal for the week ending September 27, 1916, and for the corresponding period a year ago, from Minneapolis, in pounds, were:—

	1916 Oil.	1916 Cake.	1915 Oil.	1915 Cake.
Thursday	283,117	598,206	497,530	424,260
Friday	450,415	646,640	290,801	566,250
Saturday	547,714	567,593	459,096	926,225
Monday	255,285	801,941	457,211	671,840
Tuesday	184,154	705,553	418,971	876,095
Wednesday	450,566	729,063	367,855	676,250
Totals	2,141,251	4,048,776	2,491,473	4,140,900

Daily shipments of domestic seed for the week ending September 27, 1916, and for the corresponding period a year ago, in bushels, were:—

	Duluth 1916.	Duluth 1915.	Minneapolis 1916.	Minneapolis 1915.
Thursday	....	11,614	....	....
Friday	56,637	10,190	....	....
Saturday	....	77,084	2,520	....
Monday	30,038	192,618	....	1,000
Tuesday	....	4,682	....	1,000
Wednesday	....	5,587	....	2,000
Totals	86,675	301,775	2,520	4,000

Total shipments of seed for the crop season, September 1, 1916, to September 23, 1916, at Chicago, Duluth and Minneapolis, and for the corresponding period a year ago, in bushels, were:—

	1916.	1915.
Chicago	1,000	....
Duluth	223,188	584,148
Minneapolis	7,140	8,850
Totals	231,328	556,998

Stocks of seed in public store for the week ending September 23, 1916, and for the corresponding period a year ago. This table also gives the stocks for the week ending September 16, 1916, in bushels:—

	Sat., Sept. 23, 1916.	Sat., Sept. 16, 1916.	Sat., Sept. 25, 1915.
Duluth	729,273	903,577	168,274
Minneapolis	5,407	3,092	6,204
Totals	734,680	906,669	174,478

Minneapolis Closing Telegram.

Minneapolis, Minn., Sept. 29.

Heavier receipts are coming in, but the demand for seed is very good and prices are firm to strong compared with the futures. To arrive offerings quote liberal and in good demand. Market sharply higher on Argentine news. Spot seed closed $2.28@2.32, arrive 1 cent less. Advance in prices shut off some of the moderate oil trade; scattering demand reported. Meal market firm for spot and nearby delivery. No change to report concerning cake market; steady inquiry.

DULUTH.

Duluth, Minn., Sept. 27, 1916.

The sanguine feeling that the bears have been enjoying, with the outlook for lower levels in the flax market because of the larger Northwestern crop, has been somewhat dissipated by the situation outside of this continent. Argentina is now the factor that is ruling, and just at present it is most favorable to the bulls. The impression here is that, unless the drouth there is broken soon, prices in the flax markets of the world are likely to go soaring.

The Argentina planting is about half way to a crop at this time, and considered to be in an especially dangerous situation with which to deal with a period of such excessive dryness such as is reported. A heavy rain reported in the Argentine today affected all of the market except flax, and might have affected that here had not Buenos Aires been reported as holding a heavy advance in price; so it is figured locally that the damage is more pronounced than what has been learned on this continent.

Should the damage in South America be very serious, it will leave the world's supply in a precarious condition, for the 22,000,000 to 23,000,000 bushels expected from the United States and Canada, combined, is far from a normal crop, as viewed in past figures, and would not do much to stave off the hunger of demand. Argentina just now is the key to the situation and the fate of the crop there is therefore important.

The Northwestern crop is now beyond the effect of frost and the market is no longer worried about that situation.

Despite the fact that the seed looks bullish now, and with the chances of the drouth making permanent havoc in our Southern neighbor, speculators are rather chary about getting in, and for a market that has been constantly showing good advances on the bad news for a week now, even though the closing prices have not always showed a firmness, speculators are conspicuous by their absence. It would not take many sessions like that of today, however, to get them busy.

Receipts here are very light, but shipments are loosening up to some extent.

The closing prices for the past six trading days, compared with the same period a year ago, were:—

CLOSING.

	1916 Cash.	1916 Arrive.	1915 Cash.	1915 Arrive.
Thursday	$2.10	$2.09	$1.69	$1.69
Friday	2.15½	2.15	1.75	1.75
Saturday	2.17½	2.16½	1.76½	1.76½
Monday	2.15½	2.14½	1.82	1.82
Tuesday	2.14½	2.14½	1.82½	1.82½
Wednesday	2.18½	2.18½	1.82	1.82

	1916 Sept.	Oct.	Nov.	Dec.	May.
Thursday	$2.09½	$2.09	$2.09	$2.08	$2.12
Friday	2.14	2.14½	2.15	2.14	2.17
Saturday	2.15½	2.16½	2.16½	2.15¾	2.19½
Monday	2.14	2.14½	2.15	2.13½	2.19½
Tuesday	2.12¾	2.13	2.13	2.12½	2.16½
Wednesday	2.17	2.17	2.17	2.16¼	2.20¾

	1915 Sept.	Oct.	Nov.	Dec.	May.
Thursday	$1.69	$1.69	$1.69	$1.67¾	...
Friday	1.76	1.75	1.74¼	1.73	...
Saturday	1.80½	1.76½	1.75	1.73	...
Monday	1.84	1.82	1.80	1.78½	...
Tuesday	1.84½	1.82½	1.80½	1.70	$1.86
Wednesday	1.82	1.81	1.80	1.77½	1.85

Receipts and shipments for the past six trading days, compared with the corresponding period last year, were:—

DOMESTIC.

	Receipts 1916.	Receipts 1915.	Shipments 1916.	Shipments 1915.
Thursday	....	435	....	11,614
Friday	....	....	56,637	10,190
Saturday	61	....	....	....
Monday	4,176	54	30,038	192,618
Tuesday	42	2,095	....	4,682
Wednesday	....	....	....	5,587
Totals	4,279	2,584	86,675	224,691
Week ago	9,270	7,357	109,141	112,104

BONDED.

	Receipts 1916.	Receipts 1915.	Shipments 1916.	Shipments 1915.
Thursday	....	....	....	1,508
Friday	....	....	....	....
Saturday	....	....	....	....
Monday	....	....	....	....
Tuesday	....	....	....	....
Wednesday	1,179	....	....	....
Totals	1,179	....	....	1,508
Week ago	....	1,340	42,000	....

The number of bushels of flax in store in Duluth elevators at the end of the calendar week, closing Saturday night, was as follows:—

	In store.	Change.
Bonded	75,932	+1,154
Domestic	729,273	—174,304
Totals	805,205	—173,150

The number of bushels in store up to the close of business last night was as follows:—

	In store.	Change.
Bonded	77,000	+1,000
Domestic	729,000	....
Totals	806,000	+1,000

Duluth and Minneapolis stocks of flax at the close of the calendar week, compared with the corresponding week last year, were:—

	1916.	1915.
Duluth	805,000	171,000
Minneapolis	5,000	6,000
Totals	810,000	177,000

Cars of flax received at Duluth, Minneapolis and Winnipeg during the past week, compared with the corresponding week last year, were:—

	1916.	1915.
Duluth	15	2
Minneapolis	94	81
Winnipeg	54	4
Totals	163	87

Closing prices for bonded flax each day of the week ending today, compared with the prices one year ago:—

	1916. N. W.	1915. N. W.
Thursday	$1.89	....
Friday	1.94½	....
Saturday	1.96½	....
Monday	1.94½	....
Tuesday	1.96	....
Wednesday	1.97	....

The following is a comparison of the closing prices of domestic flax and a week ago today:—

	Today.	Last Wednesday.
Cash	$2.18½	$2.11¾
Arrive	2.18½	2.10¾
September	2.17	2.11½
October	2.17	2.10¾
November	2.17	2.10¾
December	2.16¼	2.09¾
May	2.20¾	2.13½

Flax in store and daily changes:—

	Domestic.	Change.	Bonded.	Change.
Thursday	812,000	....	75,000	....
Friday	755,000	—57,000	75,000	....
Saturday	755,000	....	75,000	....
Monday	729,000	—26,000	76,000	+1,000
Tuesday	729,000	....	76,000	....
Wednesday	729,000	....	77,000	+1,000

(For Duluth Closing Telegram Refer to Table of Contents on page 11.)

WINNIPEG.

Winnipeg, Man., Sept. 25, 1916.

In the past week there has been more attention given to flax futures than for some time past, and quite a lot of buying for investment has been going on, with values steadily advancing.

Both exporters and crushers are claimed to be on the buying side and the strong market is attributed to the adverse conditions for the crop in the Argentine, owing to want of rain.

Cash prices have ranged from ¼c. to ½c. under the future; crushers buying only moderately, the most of transactions being through exporting houses.

The advance in cash prices on the week is as follows:—

	Sept. 16.	Sept. 23.	Advance.
No. N. W. flax	$1.90¾	$1.98	7¼c.
No. 2 C. W. flax	1.87¾	1.95	7¼c.

The advance in futures was as follows:—

	Sept. 16.	Sept. 23.	Advance.
October, month	$1.91½	$1.98½	7c.
November, month	1.91½	1.98	6¼c.
December, month	1.91½	1.97¾	6¼c.

The Canadian crop is admittedly short and the quality is expected to be poor and values are expected to be high.

The total number of inspections for the week were 55 cars, of which 11 were new crop and all graded top quality with the exception of one car which passed as No. 3 C. W.

The stocks in terminals on September 22 were 1,020,681 bushels, as against 1,165,428 a week ago and 896,076 last year.

Shipments last week were 213,789, as against 107,351 a year ago.

Details are as follows:—

	1916.	1915.
No. 1 N. W. C.	193,132.05	662,566.04
No. 2 C. W.	161,931.22	205,665.33
No. 3 C. W.	23,457.26	10,523.43
Others	42,160.12	17,316.06
	1,020,681.09	896,076.37
Previous week	1,165,428.53	
Decrease	144,747.44	
Receipts for past week		69,040.54

(For Report on Buenos Aires Market refer to Table of Contents on page 11.)

Customs Appraisers' Decisions.

"Grease" Oil.

The Board of United States General Appraisers overruled the protests of F. B. Vandegrift & Co., Philadelphia, on the ground that the testimony of the witnesses called in behalf of the importer was unsatisfactory and not sufficient to overcome the presumption of correctness attached to the collector's action. The merchandise consisted of emulsified wool grease, light-colored grease oil and similar oils claimed by the importers to be "low grade." The articles in question were assessed at the rate of 20 per cent. ad valorem under the provision for distilled oils. The importer claimed duty at 15 per cent. under paragraph 44, providing for rendered oils and greases, or at the same rate under paragraph 46, or that it should have been allowed free entry under paragraph 498.

Liquid Gum Styrax.

Fritsche Brotners, New York, were sustained in their contention that liquid gum styrax was properly dutiable at 10 per cent. ad valorem under paragraph 9 of the tariff act of 1913. The collector assessed duty at the rate of 20 per cent. as an article used in the manufacture of perfumery. Previous cases were cited by the importer to show that identical merchandise was accorded entry at 10 per cent. ad valorem.

Medicinal Preparations.

Thomas Nevin, New York, lost in his contention that merchandise returned by the collector under paragraph 17, act of 1913, as a medicinal compound or similar article put up in packages of less than 2½ pounds gross weight, and assessed at 20 per cent. ad valorem, should have been classified as an unenumerated manufactured article dutiable at 15 per cent. Following the case of Britt, Loeffler & Weil vs. United States (T. D. 36428), the protest was overruled.

Varnish.

Favor, Ruhl & Company, New York, were sustained in the claim that certain varnishes should have been returned under paragraph 58, act of 1913, and assessed at the rate of 10 per cent. ad valorem. The merchandise, which was assessed at 20 per cent., under paragraph 17, consisted of varnishes similar in all respects to the varnishes passed upon by the board in Abstract 39354 (March 8, 1916) and held dutiable at the rate of 10 per cent. under paragraph 58, as claimed.

Iron Drums.

Failure on the part of the Union Oil Company, Los Angeles, to comply with the Treasury regulations relating to the importation of American goods returned, resulted in Judge Hay overruling the firm's claim for free entry. The board held that compliance with the regulations was a condition precedent to the right of free entry. The goods in controversy consisted of iron drums. The collector was affirmed in levying 20 per cent. on the containers as metal manufactures not specially provided for.

Charge Excessive Freight Rates on Cottonseed Oil.

Washington, Sept. 19, 1916.

Procter & Gamble Company has filed a complaint against the Southern Railroad Company respecting rates on cottonseed oil shipped to their factories at Cincinnati (Ivorydale), Ohio. The complainants allege that the rate of 34½ cents per 100 pounds applied on three cars of cottonseed oil shipped by the Interstate Oil & Fertilizer Company to Procter & Gamble Company, from Hillsboro, Ala., to Ivorydale, is excessive, and ask for reparation.

Paints and Paint Materials

Unless otherwise specified, our prices are those prevailing in the New York Market, and are for large quantities. Complete prices current will be found on pages 115, 116 and 117, and table of contents on page 11.

Saturday Noon, Sept. 30, 1916.

Probably the most important feature of the week with reference to paint material is found in the advances made in quotations for linseed oil. A week ago we reported a firm market with values of an upward tendency. Even greater firmness was given this week, with very bullish reports being circulated about the progress of the Argentine linseed crop. These reports had a material effect on oil, as quotations showed an advance from 3 to 4c. per gallon during the week. Other paint-making oils also were firm. The lead and zinc pigments are steady, with demand reported good in all cases. A good demand is reported for lithopone and prices for this product show a variation according to seller. Some of the dry colors have been offered on more favorable terms this week. A wide range in prices was heard for Prussian blue and considerable discussion also has arisen regarding the quality of offerings which are on the market. No change is reported in the case of chrome green and chrome yellow. Varnish gums are in fair demand, with prices for most selections reported as firm. Only small lots of chalk are being imported and prices for this material are largely nominal, with English said to be worth around $7.50 per ton delivered at New York. Manufacturers of whiting are holding their product at high levels owing to the situation in chalk. Casein is quoted at different prices, with values varying according to quality and also according to seller. Metallic paints are reported to be moving well and some sellers say that they are finding a better outlet this year than for some time. Prices for metallics are unchanged. The window glass trade is a little unsettled owing to doubt regarding the opening of the hand-operated plants, but stocks of glass are small and prices are being well maintained. On page 20 there is a complete report on the flaxseed situation. A report on linseed oil and naval stores will be found on pages 29 and 33, respectively. Comment on the important items in the paint trade follows:—

LEAD ZINC AND PIGMENTS.

PIG LEAD.—Prices for pig lead have held steady throughout the week. The official price has held at 7c. per pound at New York. At East St. Louis lead was quoted at 6.92½c. per pound.

WHITE LEAD (BASIC CARBONATE).—About the only feature to this market is the steadiness with which prices are maintained. The metal market has held steady through the week, and, as the pigment is largely influenced by the metal, there was no reason to look for any change in the former. Demand for this pigment is normal, with a steady delivery against existing contracts. There is also a fair spot demand, especially for white lead in oil. Prices for dry white lead are quoted at 8¾c. per pound, with prices for white lead in oil at 9¾c. per pound. In both cases these quotations refer to large quantities, and smaller lots are higher accordingly.

WHITE LEAD (BASIC SULPHATE).—The market was quiet during the week, with no new developments. Buyers of large amounts are quoted on a basis of 8½c. per pound, with sales of smaller lots reported at that level.

RED LEAD.—Red lead in oil is receiving considerable attention and jobbing trade is reported to have improved. Prices are holding steady, with quotations at 10¼c. per pound and upwards, according to quantity. Dry red lead is held at an inside price of 9¾c. per pound. Demand for both the dry product and that ground in oil is said to have been large enough to hold stocks at low levels for some time, and this has been one of the factors in maintaining values.

LITHARGE. — Sellers are quoting litharge at 9¼c. per pound to buyers of large amounts, and demand for small lots is said to be of minor importance. There is a good delivery against contracts and total consumption is well up to seasonable standards.

ORANGE MINERAL.—There is still a difference in price for this product, according to seller. The inside quotation in some cases is 12c. per pound, whereas other sellers are asking 12½c. per pound. There is a routine demand for this material and a good call is reported for delivery on old contracts.

SPELTER.—The market for spelter at East St. Louis closed at 9c. per pound bid, with 9¼c. per pound asked. This was for spot material. At New York 9.30c. per pound was given as the quotation.

ZINC OXIDE.—With the first of the month, new prices become effective for French process zinc oxide. These prices were announced some time ago, and most consumers have secured their allotments covering the balance of the year. These quotations are as follows:—White seal, 13c. per pound in car lots and 13½c. per pound for less than car lots; green seal, 12½c. per pound for car lots and 12⅝c. per pound for less than car lots; red seal, 12s. per pound for car lots and 12½c. per pound for less than car lots. These prices are based on shipments in barrels f. o. b. shipping point. No change has been made in the price for American process zinc oxide, and current contract prices will hold good until the first of the year. Second hand offers are in the market with quotations running from 10 to 11c. per pound.

DRY COLORS.

BLACKS.

No active inquiry is reported in the market for blacks as far as spot trading is concerned. There is a good call for delivery on contracts and most consumers are covered in this way. In some cases there is a scarcity of offering on spot, especially in the case of carbon gas black. This is not a new situation, but has existed for some time, as manufacturers have been sold ahead and thus have had no surplus to take care of new accounts. Prices are quoted at 14c. to 20c. per pound. Bone black varies in price, according to grade, with 4c. to 8c. per pound as the quotation. Mineral blacks are offered at $20 to $30 a ton.

BLUES.

A good deal of attention has been given this week to Prussian blue, owing to the fact that sellers have been quoting at different levels. In some cases as low as $1 a pound has been quoted, and on red shade Prussian blue there have been offers as low as 95c. per pound. Milori blue was offered in the market this week at $1.45 per pound. In quoting on these blues a distinction is made according as they are produced from soda and potash. Prussian produced from potash is quoted at $1.25 to $1.80 per pound, and this quotation also applies to Chinese blue. Ultramarines are offered at different prices in the spot market, with 20 to 60c. covering the asking prices.

BROWNS.

No changes of importance have been noted in any of the offers of this market. Italian sienna is moving in a normal way, with prices quoted at 6 to 8c. per pound for burnt and powdered. Domestic umber is held at 2 to 2½c. per pound for burnt and powdered and the same quotation applies to the raw. Turkey umber is firm, with sellers asking 4 to 5c. per pound for burnt and powdered.

GREENS.

Chemically pure chrome green shows a variation in price, according to grade, with 40 to 65c. per pound given as the quotation. Some sellers are making a distinction according to quantity. Light to medium grades are quoted at the lowest levels, with the deeper shade bringing the highest prices. Grinders chrome green is quoted at 15 to 23c. per pound and jobbing at 13 to 15c. Common chrome green is offered at 9 to 13c. per pound.

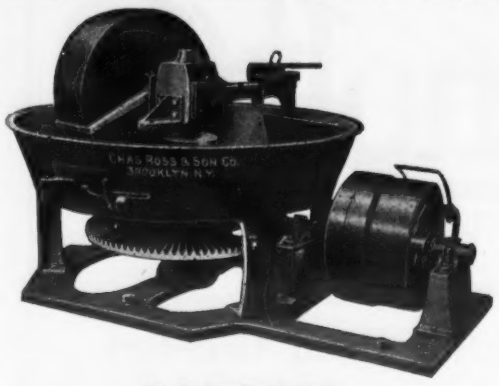
REDS.

Offerings of para toners concentrated are now on the market at $2 per pound, but some criticism is heard regarding quality. There is a range in price, according to grade, with $2 to $2.75 given as the quotation. Tuscan reds are quoted at 19 to 25c. per pound. Venetian red is steady at 2 to 2¾c. per pound. Carmine No. 40 holds at $4.75 to $5.50 per pound.

YELLOWS.

Different quotations are heard for chemically pure chrome yellow. Primrose yellow is quoted at 24c. per lb.

Charles Ross and Son Company



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and prices vary according to shade from that point up to 31c. per lb. Some offerings of orange chrome yellow are reported to be held at 35c. per lb. Domestic ochre is in seasonable demand, with prices holding steady at $20@30 per ton, according to grade. French ocher is quoted at 2¼@3c. per pound.

OTHER PAINT MATERIALS.

BRONZE POWDER.—Some offerings of bronze powder were reported this week at 72@75c. per lb. Aluminum bronze powder is quoted on a basis of $1.20@1.30 per lb.

BARYTES.—A pretty steady market is reported for all grades of barytes. Offerings of foreign grades are rather limited with quotations at $38@40 per ton. Domestic barytes vary in price according to grade. Off color barytes is quoted as low as $22 a ton with the higher grades at $26 a ton f. o. b. New York.

CHINA CLAY.—Domestic China clay is holding steady both in movement and in price. Demand for this material has been good for some time, owing to the limited offerings of foreign grades and this condition still holds true. Prices depend on grade and quantity with quotations at $12@15 per ton. Imported grades of China clay are in good demand, with trading largely confined to forward positions. Prices are quoted at $15@32 for bolted clay and ordinary at $23@42 per ton.

LITHOPHONE.—Some local sellers are said to be offering the output of western producers on a basis of 8½c. per lb., this quotation being f. o. b. New York or Chicago. Some second-hand offers have been on the market this week at 8c. per lb. Sales are reported as high as 9c. per lb., and some sellers say that high-grade lithopone in single ton lots is held at inside price of 9¼c. per lb. f. o. b. factory.

WHITING.—A firm market still exists for this material and the reasons for it are found in the high prices which are asked for chalk and in the difficulty which is found in securng stocks of the latter. There is a good demand for whiting and values are holding steady. Prices are quoted at 90c. for commercial, $1.08 for gilders and $1.15 for extra gilders. These prices are per 100 pounds, in ton lots. English cliff stone is quoted at $1.25 per 100 pounds for lump and $1.60 per 100 pounds for bolted.

GLUES.

Imports of glues are not likely to be helped by recent restrictions prohibiting shipments from France, and there is a firmness in the market for all foreign grades. Demand for the latter has been good for some time and has kept stocks at a low point. Demand for domestic glues is not active, though some sellers say that inquiry has been better and the outlook is regarded as promising. Glue stock is holding at high levels and has been a factor for some time in maintaining values for the finished product.

VARNISH GUMS.

Some advices say that copal gums are in better demand. Prices are holding steady with picture grades quoted at 25@26c. per lb. White copal ranges from 18@30c. per lb., according to grade. Amber holds at 9@9½c. per lb. There is no change in damars, and No. 1 Batavian is quoted at 19½c. per lb., and No. 1 Singapore damar at 21½@22c. per lb. Kauri gum shows a wide range in price, according to grade, with No. 1 at 43@44c. per lb. and No. 2 at 28@30c. per lb.

London Varnish Gum Auction.

London, Sept. 7, 1916.

At auction today copal and damar were in good supply; the former met with a fair demand at irregular prices, the lower qualities showing 2s.@3s. decline; damar was in request and generally showed no price alteration. Olibanum, the only other gum offered, was quiet. The details are:—

	s.	d.	s.	d.
Copal, pkgs, 4,981 offered, 1,800 sold.				
Manila and Macassar, small, amber and dark, hard, scraped .....cwt.	50	0		
pale amber to dark softish...	43	6		
small to medium, yellow and amber	43	0@	43	6
small, amber, fluted.....	39	6		
amber and dark, fair, scraped, softish.....	37	0		
sorts, soft, blocky.....	27	0@	31	6
nuts, amber and dark.....	36	0		
scraped, block.....	32	0		
reddish and dark.....	32	0		
chips, fair, yellow and grayish	28	0@	34	6
block, ditto.....	26	0		
dark and woody, part blocky.	26	0		
hard, block, common to palish	23	0@	34	6
dust, block.....	17	0@	20	0
Sambas, nuts and chips, dull...	46	0		
Congo, pale and amber, scraped	28	0@	28	6
Angola, common to fair, palish	30	0@	49	0
Damar, 1,000 pkgs. offered, 930 sold.				
Batavian, graded, small to bold, palish, cwt.....	97	0		
dust, grainy.....	50	0		
Singapore, sorts, pale.....	96	0@	99	0
grey	66	0		
dust, pale.....	25	0		
block	23	0@	24	0
Black Borneo, medium, scraped.	23	6@	24	6
nuts and chips.....	20	0		
Batu, bold, rough, coated.....	15	0@	16	6
nuts and chips.....	13	6@	14	6
Siam, pale, ambery.....	85	0		
sorts, grey.....	65	0		
rough and pickings.....	40	0		
Olibanum, cs, 170 offered, 8 sold.				
good garblings.....	37	6		

WINDOW GLASS.

Quiet conditions were reported in the window glass trade during the week. The wage question has been settled, and according to this settlement the hand-operated plants will re-open on October 25. These were the main points about which there was an uncertainty. Prices for glass are holding steady, with a firm tone to the market.

New Corporations.

DELAWARE.

The Roberts Sulphite Co., deal in and with wood, pulp, paper stock, etc., operate saw mills, etc.; $2,000,000; Herbert E. Latter, Norman P. Coffin, Clement Egner, local Wilmington, Del., incorporators.

Ed S. Vail Butterine Co., manufacture, sell and deal in and with butter, oleomargarine, etc., $500,000; H. E. Latter, N. P. Coffin, C. M. Egner, local Wilmington, Del., incorporators.

Utility Distributing Corp., deal in and with chemicals and combinations to remove and prevent the formation of carbon; $1,000,000; M. I. Newman, Tarrytown, N. Y.; W. S. Milliker, C. J. Coleman, both of New York.

Seaboard Oil and Refining Co., acquire lands, containing oil and develop the same; $2,000,000; Herbert E. Latter, Norman P. Coffin, Clement M. Egner, local Wilmington, Del., incorporators.

Cuban Potash Corp., acquire, own and develop lands containing potash, deal in fertilizers; $5,000,000; Theodore B. Heller, Thomas C. Meadows, Irving E. Burdick, all of New York.

Security Producing and Refining Co., prospect for and refine petroleum, minerals, oils, and natural gas; $3,750,000; H. E. Latter, N. P. Coffin, C. M. Egner, local Wilmington, Del., parties.

United Dye Wood Corp.; capital stock, $20,000,000. Incorporated by Harrison Tweed, Welton C. Percy and W. F. Cahill, all of New York.

Penn-Tex Oil and Gas Co., to bore and drill for oil and dispose of same; capital, $60,000.

Guernsey Oil and Gas Co., the business of an oil and gas company; capital, $50,000.

MAINE.

Petroleum Exploration, Portland; mining, boring for, shipping, etc., oil, gas, petroleum and products thereof; capital, $100,000.

Wyoming Gas Co., Portland; drill and dig for oils, gas, etc., manufacture all products of gas and petroleum; capital, $300,000.

NEW JERSEY.

Foram Corp., South Orange; conduct engineering and chemical works; $75,000; Clarence C. Campbell, William R. Baird, South Orange; Stephen S. Newton, New York.

P. A. B. Co., Inc., Newark; manufacture all kinds of chemicals; $125,000; T. S. Askew, New York; W. Prout, Bernardsville; E. Birkholz, Newark.

NEW YORK.

American Oil Export Co., Inc.; petroleum products, mine coal, oil, gas; $100,000; G. W. Geiling, F. H. Stokes, J. J. Thornley, 399 Sixth avenue, Brooklyn.

Empire Seed Co., Inc., Schenectady; seeds, poultry, paints, fertilizers, feeds; $5,000; H. E. Stevens, C. B. Filkins, C. Vernon, Schenectady.

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DAVENPORT, IA.—419-419 Scott Street
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NEW ORLEANS, LA.—Girod and Commerce Streets
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Star Syrup Co., Inc., Brooklyn; syrup plant; $10,000; H. E. S. and P. Kaplan, 1152 Eastern Parkway, Brooklyn.

American Bottle and Jobbing Co., Inc., Brooklyn; glass bottles; $5,000; H. Loudon, S. and P. Subatrick, 630 Bergen avenue, Bronx.

Carbon Eliminating Co., Inc., Brooklyn; autos, equipment, oils, chemicals, carbon eliminating process; $10,000; J. S. Isler, A. and J. Bonner, 87 Maiden lane.

The No-Car-bon-no Co., Inc.; auto, engine, machinery supplies, equipments, patented liquid; $100,000; H. M. Desulykowsky, G. Freimarck, S. Nemeth, 300 East Eighty-ninth street.

Broga Soluble Oil Co., Inc., Syracuse; oil, chemical preparations, articles, compounds; $30,000; W. H. Harding, F. C. Love, F. D. Broga, 317 Gifford street, Syracuse.

The T. R. D. Barse Chemical Co., Inc.; chemists, druggists; $50,000; J. G. Treacy, W. R. Straine, T. R. Doyle, 668 Eighth avenue.

Mineral Industrial Corp. of Cuba; milling, mines, ores, metals, minerals, products, agriculture, timbering, warehouses, grain elevators, 300 shares no par value, begin business with $1,500; M. J. Murray, Z. K. Graham, J. Osler, 505 Fifth avenue.

Hallruk Chemical and Engineering Co., Inc., Esopus; sizing product for treatment of silks, fabrics and other commodities, feed water treatment for boilers, a chemical for treating water for boilers; $30,000; R. Beckmann, J. J. Morgan, W. R. Smith, 8 Brookdale avenue, New Rochelle.

American Middleburg, Transvaal, Corp.; mines, mining rights, coal, coke, wood, minerals, chemicals, hotels, theatres; $1,000,000; M. V. Skrivanek, Middleburg, Transvaal, South Africa; J. F. C. Luhan, S. A. Heuszey, New Dorp.

The Grain Chemical Co., Inc., patent medicines, drugs, medicines; $10,000; H. Gorham, Jr., J. F. Mulqueen, Jr., A. F. Vantine, 27 Wall street.

Harry Witriol, Inc., Brooklyn; paints, varnishes, decorative work; $5,000; N. J. and H. Witriol, 635 New Jersey avenue, Brooklyn.

Honduras Petroleum Co., Inc.; oil lands, oil, petroleum products; $250,000; H. D. Merchant, I. S. Josephs, E. M. Davidson, 130 East Twelfth street.

OKLAHOMA.

Cincinnati Petroleum Co., Oklahoma City; capital, $100,000. Incorporated by Walter W. Wells and H. B. Thomas, of Oklahoma City, and E. E. Boyle, of Wichita, Kan.

Oil and Gas Producers' Co., Bartlesville; capital, $250,000. Incorporated by W. H. Byron, Frank Bucher and A. J. Stratton.

North Iowa Oil and Refining Co., Lawton; capital, $50,000. Incorporated by E. S. Galloway and A. E. Galloway, of Lawton, and S. Bruce Galloway, of Waterloo, Iowa.

Varner Drilling Co., Lawton; capital, $40,000. Incorporated by A. C. Varner, S. R. Varner and R. L. Mayhew.

Solo Oil Co., Oklahoma City; capital, $100,000. Incorporated by H. B. Houghton, M. A. Isaacs and G. B. Beam.

Sanquine Oil and Gas Co., Oklahoma City; capital, $15,000. Incorporated by O. C. Patterson, W. T. Perry and J. L. Lyon.

Gap-Rock Oil Syndicate, Oklahoma City; capital, $100,000. Incorporated by John Maney, C. W. Fowler and H. L. McCrackon.

Merry Oil and Gas Co., Warner; capital, $100,000. Incorporated by G. V. Reynolds and J. T. Smith, of Warner, and E. L. Merry, of Oklahoma City.

SOUTH CAROLINA.

Farmers' Oil Mill, Antreville; capital, $10,000. Incorporated by J. S. Stork, J. A. Smith and S. J. Wakefield.

TEXAS.

Penn-Tex Oil and Gas Co., Austin; chartered with $60,000 capital by F. R. Hansell, of Philadelphia, Pa.; George H. B. Martin and S. C. Seymour, of Camden, N. J.

Leland Oil and Gas Co., Houston; capital, $50,000. Incorporated by S. M. Spencer, J. A. Jones, Jr., and M. G. Hargrave.

Rosenthal Oil and Gas Co., Houston; capital, $20,000. Incorporated by Morris Rosenthal, Joe Rosenthal and J. H. Gorman.

Central Goose Creek Oil Co., Houston; capital, $40,000. Incorporated by Hilton E. Dunseth, G. A. Dutton and L. W. Clark.

Primrose Petroleum Co., Dallas; capital, $30,000. Incorporated by J. B. Preston, Herbert Brin and R. M. Blumrosen.

WEST VIRGINIA.

Stone Branch Oil and Gas Co., Long Branch; capital, $10,000. Incorporated by R. E. Lowe, A. B. Land, C. W. Joes and others.

Bids for Navy Supplies Opened.

Bids were received at the Bureau of Supplies and Accounts, Navy Department, Washington, D. C., on September 26, for materials and supplies for the navy yard, as follows:—

Bidder No. 6. Avery Chemical Co.
11 Berry Bros.
15. W. H. Bowdlear Co.
17. E. A. Bromund Co.
24. W. Wirt Clark & Son.
27. E. Calman & Co.
29. John A. Casey Co.
38. Federal Sales and Service Co.
41. General Naval Stores Co.
46. R. W. Gildart.
50. W. H. & J. F. Jordan, Jr.
53. Knickerbocker Supply Co.
56. John Lucas & Co.
59. James Miller.
63. McCloskey Varnish Co.
65. Manhattan Supply Co.
67. Moller & Schumann Co.
80. Pratt & Lambert.
91. Standard Varnish Works.
98. Sun Varnish Co.
99. Standard Linseed Co.
108. Universal Trading Co.
112. Ward & Co.
115. A. Wilhelm Co.
122. Yaryan Rosin and Turpentine Co.

SCHEDULE 119.
Construction and Repair.

Class 164. Brooklyn.—1,000 lbs. beeswax—Bidder 15, 34c.; 17, 35c.; 24, 37.9c.; 38, 36.75c.; 59, 34c.; 108, 36.72c.

Class 165. Brooklyn.—5,000 lbs. lump borax—Bidder 50, 9c.; 53, 9.25c.; 59, 8.24c.; 65, 9.7c.; 108, 9.89c.

Class 166. Norfolk.—2,000 gls. paint drier—Bidder 11, 50c.; 27, 88c.; 38, 92c.; 56, 71c.; 63, 91c.; 67, 81c.; 80, 75c.; 91, 73.625c.; 98, 80c.; 99, informal; 115, 61c.

Class 167. Brooklyn.—40,000 lbs. lump resin—Bidder 6, 2.54c.; 29, 2.6c.; 38, 2.45c.; 41, 2.23c.; 46, 2.28c.; 108, 2.339c.; 112, 2.475c.; 122, informal.

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TEXAS COTTONSEED MEN PLAN TRADE CHANGES

Situation Regarded as Exceedingly Mixed with Poor Prospects, Hence Series of Conferences to Seek Improved Conditions.

OFFICIAL COTTONSEED DATA ASKED BY SEED CRUSHERS

Owing to mixed conditions in the cottonseed business in Texas up till the middle of September, with all sorts of prices prevailing and with none of them promising much hope of profit in working the cottonseed crushers of Texas appealed to the State Warehouse and Marketing Department at Austin to assume the responsibility of issuing weekly quotations on cottonseed marketing conditions during the marketing season.

Jo W. Allison, chairman of the Bureau of Publicity of the Interstate Crushers, in statement said:—

The matter already has been presented to F. C. Weinert, manager of the department, and was first declined on the basis that the department has not sufficient funds to carry on the work. In answer to that objection the cottonseed crushers of the State agreed to pay all expenses incident to gathering and disseminating the information if it can be done legally.

It is the plan of the Texas Cottonseed Crushers' Association to have authoritative information with reference to market conditions issued by a strictly official body, in this way stabilizing conditions and removing the prejudice which has become so detrimental to the industry in this State. Such a plan has been adopted in Louisiana, where conditions were very similar to those in Texas, with the exception that the information is gathered and bulletins are issued by a committee created by the Governor of Louisiana, one of the three members of which is a cotton oil man.

Wants Reports Unbiased.

The Texas oil men want the information issued by a purely State department, and one in which no oil man has any authority or influence, in order that the people may put full confidence in the bulletins on market conditions and minimum prices and not feel that they are colored by oil mill influence.

It would be necessary for the department to employ an auditor to visit representative mills in different sections of the State and investigate the cost of oil mill operation, freight rates and the average yields of oil, cake, meal and linters. On this information as a basis the estimate of a fair average minimum price for cottonseed could be made and issued weekly, to serve as a marketing guide. The Louisiana commission has just completed an investigation of this kind and issued its bulletin stating that on the basis of the information thus gained $36 per ton was considered a fair minimum price for cottonseed.

Mills to Report Data in September.

Declaring that they are losing from $4 to $8 a ton on cottonseed bought at the prevailing prices in the State at the present time, 125 cottonseed crushers met in Dallas in September and voted to approve the plan suggested at a similar meeting in Dallas to gather statistics with reference to the industry. These are desired to enable them to systematize their business and arrive at a more accurate cost system for determining what prices they can afford to pay for cottonseed at the same time make a reasonable return on their mill investments.

The mills in Texas will therefore be asked to report the following information to the Texas Cottonseed Crushers' Association at Dallas:—(1) Total tons of seed crushed during season of 1915-16; (2) tons of cake and meal produced by each mill during 1915-16 and the number of tons sold for consumption in Texas, for domestic consumption outside of Texas and for export, and (3) the same information with reference to hulls.

Minneapolis-St. Paul Paint, Oil and Varnish Club Elects Delegates.

The first fall meeting of the Minneapolis-St. Paul Paint, Oil and Varnish Club was held in the banquet room of the Dyckman Hotel, Minneapolis. An elaborate menu and pleasing entertainment brought out a full attendance of guests. The meeting was taken up with a discussion of "Paint-Up and Clean-Up" accomplishments during the spring campaign, nomination of officers for the coming year and selection of delegates and alternates to the national convention next month. A statement was submitted by the chairmen of their respective "Paint-Up and Clean-Up" committees, A. Elvgren and C. D. Morck showing collection and disbursement of more than $1,000 to promote this work in the twin cities. Outside of this cash disbursement there was a large amount of free advertising given the movement by moving picture houses, street car companies and bill-board companies which cannot be computed in dollars and cents.

Officers nominated for the election at the October meeting were as follows:—President, A. W. Ludwig, T. O. Bannister; vice-president, L. A. Moore, W. M. Burns; treasurer, A. Elvgren, R. G. Weiskopf; auditor, L. M. Leffingwell, H. G. Leitz; secretary, T. O. Bannister, J. V. Slocum.

The following delegates and alternates were appointed to represent the club at the Atlantic City national convention:—

Delegates.	Alternates.
E. F. Rosenberg,	B. F. Robertson,
O. C. Adamson,	J. W. Daniels,
W. H. Barber,	R. G. Weiskopf,
E. W. McNear,	T. O. Bannister.

Autumn Meeting of the Cleveland Paint, Oil and Varnish Club.

Thirty-five members and four guests sat down for dinner at the Hotel Olmsted at the regular fall meeting of the Cleveland Paint, Oil and Varnish Club, following the summer vacation. The Cleveland club was very active this summer, as can be vouched for by the members of the clubs of Buffalo, Detroit and Toledo, who were the club's guests at the "Big Four outing" in July. The reports of the standing committees showed splendid work being done and a very promising future for the club. The special committees who have arranged for the details of the Cleveland delegation attending the national convention reported a special car to carry the members from Cleveland, to be attached to the Chicago train. In addition to this, quite a number of Cleveland members have arranged to motor to Atlantic City. Cleveland will be represented by Messrs. R. B. Robinette, Davis Hawley, Jr., W. A. Alper, Geo. F. Hunt and M. A. Smetts as delegates, and by Messrs. M. B. Flynt, George W. Flynt, N. D. Foster, W. L. Platt and H. O. Gibson as alternates.

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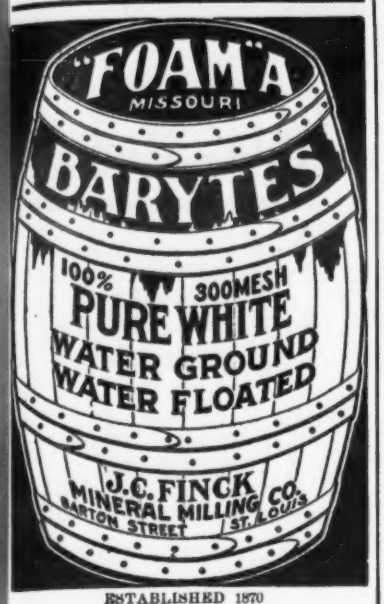

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"Amsterdam" Brands—Manufactured by US
Raw (Filtered), "Olden" Raw, Double Boiled, Heavy Bodied Boiled, Refined, Special Varnish, Pale Boiled.
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OIL MARKETS

Unless otherwise specified, our prices are those prevailing in the New York Market, and are for large quantities. Complete prices current will be found on pages 115, 116 and 117, and table of contents on page 11.

Saturday Noon, Sept. 30, 1916.

LINSEED OIL.

The outstanding feature in the linseed oil market this week was the strength in prices. At the beginning of the week 72c. per gallon was the general quotation for car lots. With a little easing off in seed this quotation became less firm, and 71½c. per gallon was openly quoted, with some offers at 71c. Then came a change in seed and prices for both seed and oil began to climb. On Friday there were offers of oil in car lots at 75c. per gallon, but many sellers would not accept business under 76c., and on Saturday there was not a seller in the local market who would shade 76c., and the quotation was given at 76@76½c. per gallon for car lots, with smaller amounts higher accordingly. Hence, there was an actual gain of 5c. per gallon in quantities for oil over the low point quoted early in the week. This advance was entirely due to developments in seed, and the latter were of foreign rather than domestic origin. The Argentine has been the disturbing factor, and the drought which has prevailed there for the past two months has brought about severe damage to the growing linseed crop, according to advices at hand this week. Reports on the extent of the damage vary, but all agree in one particular—that a large part of the linseed area is affected, and prospects for a large yield of seed this year are consequently unfavorable. This situation had an immediate effect on prices for seed in the markets of our Northwest, and this in turn reacted on oil, and accounts for the marking up of prices. Seed shipments from the Argentine this week were 319,000 bushels to the United States, 82,000 bushels to the United Kingdom and 67,000 bushels to the Continent. Reports on the Western Canadian and Buenos Aires seed markets from our own correspondents will be found on page 20.

Foreign Quotations for Linseed Oil.

Daily cable advices from Liverpool, London, Hull and Amsterdam give the following spot quotations for linseed oil in those markets:—

	Liverpool, per cwt.	London, per cwt.	Hull, per cwt.	Amsterdam florins per 100 kilos.
	s. d.	s. d.	s. d.	
Sat..	39 6	39 6	35 10½	..
Mon.	39 6	39 6	36 3	..
Tues.	39 9	39 9	36 3	..
Wed.	39 9	39 9	36 3	..
Thur.	39 9	39 9	36 3	..
Fri..	39 9	39 9	36 3	..

Foreign Quotations for Flaxseed.

Daily advices from Hull, London, Antwerp, Buenos Aires and Winnipeg give the following quotations for shipments on flaxseed in those markets, prices representing closing quotations except for Buenos Aires, where opening prices are given:—

	Hull, Per 416 lbs. La Platte.	London Per 416 lbs. Calcutta.	London Per 416 lbs. La Platte.	Antwerp, francs per 100 kilos.
	s. d.	s. d.	s. d.	
Sat..	75 6	78 9	79 0	..
Mon.	76 0	79 6	79 6	..
Tues.	76 0	79 9	79 6	..
Wed.	76 0	79 9	79 6	..
Thur.	76 0	78 6	79 6	..
Fri..	76 0	78 6	.. ..	..

	Buenos Aires, gold per bushel.	Winnipeg, per bushel.
Saturday	$1.58⅞	$1.98½
Monday	1.59½	1.97⅛
Tuesday	1.59	1.96
Wednesday	1.64½	1.99½
Thursday	1.66⅝	2.02½
Friday	1.78¼	2.11

Linseed Cake and Meal.

A good demand for cake still exists and prices are well maintained. Reports from foreign markets show firmness at consuming points abroad. Ocean freights to some points are lower than they were, but rates to Holland and Sweden are high, with tonnage scarce. Quotations for cake at New York are given at $38@38.50 per ton.

COTTONSEED OIL.

Heavy selling has tended to check the upward course of the market during the interval. The market has shown no apparent signs of weakness, but increased offerings have supplied the demand and traders have found it more difficult to advance prices and maintain a higher level. The selling was said to represent profit-taking on the part of longs, who in many instances are believed to have large paper profits. The temptation to realize was inspired probably by an easier feeling in lard and to a belief that both oil and cotton have discounted most of the bullish features which have been instrumental in bringing about the great upward swing of prices. The government crop report due at the beginning of this week is expected to portray a very serious shrinkage in the prospective supply of cotton and the bullish contingent both in cotton and oil seem confident of a further upward response in values. Meanwhile consuming demand is not showing any very great activity. Packers are reported to be the principal buyers, but it is asserted that the buying is on a very conservative basis. Export demand is light and the outward movement appears to be chiefly on old orders. Foreign shipments from the principal customs districts for August were 7,585,695 pounds, valued at $829,755, compared with 25,158,445 pounds, valued at $1,785,092, for August, 1915. Total shipments for eight months were 140,504,920 pounds, valued at $13,964,937, compared with 260,024,692 pounds, valued at $18,398,046, for a similar period in 1915. Crude oil offerings have come out a litt'e freer in the Southeast and Texas, but buyers have not been aggressive, and in some quarters it is asserted that supplies are increasing in Texas. Refiners do not seem eager to buy crude oil at prevailing prices, but the high cost of seed is keeping crushers' views firm. Below is a detailed market report of transactions for each day during the past week, together with a table of sales, receipts and exports and telegrams from the principal crude oil centers.

SPECIAL TELEGRAMS TO OIL, PAINT AND DRUG REPORTER.

ATLANTA, GA., SEPTEMBER 30, 1916.

Crude oil, 68½c. a gallon, trading nominal. Meal, $32.50 Atlanta, loose. Hulls stronger at $12.50@13 per ton, loose.

DALLAS, TEX., SEPTEMBER 30, 1916.

Oil market inactive. Prime crude, 68½@69c. a gallon. Prime summer yellow, 73½@74c. Prime loose cake, $32.25 per ton f. o. b. Galveston.

NEW ORLEANS, LA., SEPTEMBER 30, 1916.

Prime crude oil steady, 69c. a gallon in all directions. Meal dull, 7 per cent., $31 per short ton; 7½ per cent., $32.50 per short ton, ship-side New Orleans. Cottonseed, $45 per ton here.

COLUMBIA, S. C., SEPTEMBER 30, 1916.

Crude oil, 70c. bid. Meal, $34 per ton. Hulls, $14 per ton; business quiet.

Hull Cottonseed Oil Prices.

The week's prices on refined and crude cotton oil for each day during the past week were as follows:—

	Refined, spot.	Crude, spot.
	s. d.	s. d.
Saturday	38 0	31 9
Monday	38 0	31 9
Tuesday	38 0	31 9
Wednesday	38 0	31 9
Thursday	38 0	31 9
Friday	37 9	31 3

DAILY TRANSACTIONS IN THE NEW YORK MARKET.

Monday.

The market opened strong and displayed an upward tendency under active buying. Lard and cotton were both firm, and crude oil was higher at 69c. a gallon nominal in the Southeast.

	Sales.	High.	Low.	Last.
Spot	....	...	...	10.50
September	...	...	...	10.50
October	3,300	10.62	10.47	10.62
November	2,000	10.40	10.35	10.39
December	9,900	10.40	10.33	10.40
January	7,300	10.42	10.37	10.42
February	400	10.54	10.47	10.52
March	7,700	10.64	10.50	10.63
April	...	...	...	10.65

Total, 30,000 barrels.

Tuesday.

Weakness in pure lard was reflected in oil and prices were lower under moderate selling. Crude oil was nominally unchanged.

	Sales.	High.	Low.	Last.
Spot	...	...	...	10.40
September	...	...	...	10.50
October	2,700	10.57	10.50	10.53
November	1,300	10.37	10.30	10.31
December	6,900	10.37	10.29	10.31
January	7,300	10.37	10.30	10.31
February	300	10.42	10.40	10.42
March	3,100	10.55	10.50	10.53
April	400	10.63	10.62	10.63

Total, 22,000 barrels. Receipts, 1,740 barrels.

Wednesday.

Heavy offerings had a weakening influence and the market closed lower. Crude oil was quoted 68@69c. a gallon in the Southeast.

	Sales.	High.	Low.	Last.
Spot	...	...	...	10.40
September	...	...	...	10.40
October	3,100	10.52	10.40	10.40
November	4,400	10.25	10.10	10.10
December	5,100	10.30	10.13	10.13
January	11,500	10.28	10.15	10.15
February	...	...	...	10.22
March	8,600	10.49	10.36	10.38
April	100	10.53	10.53	10.53

Total, 32,800 barrels. Receipts, 480 barrels.

Thursday.

The tone of the market was steady, and the close was slightly higher. Offerings were easily absorbed, and demand at the close was active. Crude oil was quoted 68@69c. a gallon in the Southeast.

	Sales.	High.	Low.	Last.
Spot	....	....	....	10.35
October	1,200	10.40	10.29	10.40
November	1,700	10.22	10.17	10.22
December	4,000	10.24	10.09	10.23
January	4,400	10.25	10.12	10.23
February	....	....	....	10.33
March	10,600	10.47	10.35	10.47
April	200	10.61	10.60	10.61
May	500	10.65	10.60	10.60

Total, 22,600 barrels. Receipts, 100 barrels.

Friday.

Demand and offerings were both of smaller portions, and the market closed firm without important variations. Crude oil was unchanged.

	Sales.	High.	Low.	Last.
Spot	....	....	....	10.40
October	400	10.43	10.35	10.43
November	....	....	....	10.22
December	1,700	10.25	10.20	10.24
January	5,200	10.27	10.22	10.25
February	100	10.40	10.40	10.40
March	6,500	10.50	10.41	10.45
April	....	....	....	10.50
May	100	10.61	10.61	10.61

Total, 14,000 barrels. Receipts, 400 barrels.

Saturday.

The market was steady under a fair demand and light offerings. Sales of crude oil were reported in the Southeast at 60c.

	Sales.	High.	Low.	Last.
Spot	....	....	....	10.50
October	500	10.42	10.42	10.42
November	1,200	10.23	10.22	10.22
December	1,200	10.24	10.21	10.23
January	2,200	10.25	10.23	10.25
February	200	10.35	10.35	10.35
March	4,400	10.45	10.41	10.44
April	....	....	....	10.51
May	500	10.60	10.60	10.60

Total, 10,200 barrels. Receipts, 640 barrels.

Recapitulation.

The following figures give the total receipts and sales of prime summer yellow cottonseed oil in the New York market for the past week, as well as a summary of the week's sales, all options:—

Receipts, 136,500 barrels.
Sales, 2,940 barrels.

SUMMARY OF SALES.

Spot	....
October	12,100
November	9,400
December	29,400
January	38,600
February	900
March	44,800
April	700
May	600
Total	136,500

The total sales, all options, in the New York market from beginning of the crop year, September 1, 1916, amounted to 768,500 barrels. Total receipts for the same period are 9,262 barrels.

COTTONSEED OIL EXPORTS.

Following are the exports of cottonseed oil from New York, New Orleans, Baltimore, Norfolk and Philadelphia. Also a table showing the total exports from the United States:—

New York.

	For week ending Sept. 29, 1916. Barrels.	Since Sept. 1, 1916. Barrels.	From Sept. 1, 1915, to Sept. 30, 1915. Barrels.
Africa, South	111	111	.....
Argentine	10	10	.....
Bolivia	....	20	.....
Brazil	116	266	.....
British Guiana	20	45	.....
British West Indies	78	173	.....
Central America	20	94	.....
Chile	10	235	.....
Cuba	845	1,175	.....
Denmark	....	.....	4,950
Dutch Guiana	....	62	.....
Dutch West Indies	5	5	.....
England	....	.....	5,645
France	....	.....	11,409
French West Indies	215	460	.....
Greece	....	.....	600
Italy	200	200	2,980
Mexico	12	17	.....
Netherlands	4,600	7,667	6,041
Norway	....	156	.....
Panama	288	403	.....
Porto Rico	....	20	48
San Dom. & Hayti	3	39	.....
Scotland	....	.....	250
Uruguay	100	100	.....
U. S. Colombia	....	2	.....
Totals	6,633	11,224	31,923

New Orleans.

	For week. Barrels	Since Sept. 1, 1915. Barrels.	Same time last year. Barrels.
Cuba	200	200	200
England	....	.....	1,000
Mexico	....	.....	341
Norway	....	.....	5,810
Panama	100	200	.....
Sweden	....	.....	2,400
Totals	300	400	9,751

Baltimore.

	For week. Barrels.	Since Sept. 1, 1915. Barrels.	Same time last year. Barrels.
Scotland	....	.....	100
Totals	....	.....	100

Norfolk.

	For week. Barrels.	Since Sept. 1, 1915. Barrels.	Same time last year. Barrels.
England	....	.....	400
Totals	....	.....	400

Philadelphia.

	For week. Barrels.	Since Sept. 1, 1915. Barrels.	Same time last year. Barrels.
Netherlands	3,500	6,200	.....
Totals	3,500	6,200	.....

Total Exports at Principal Ports.

	For week. Barrels.	Since Sept. 1, 1915. Barrels.	Same time last year. Barrels.
New York	6,633	11,224	31,923
New Orleans	300	400	9,751
Baltimore	....	.....	100
Norfolk	....	.....	400
Philadelphia	3,500	6,200	.....
Totals	10,433	17,824	42,174

TOTAL EXPORTS FROM THE UNITED STATES.

The following represents the official returns of the exports of cottonseed oil from all ports and customs districts of the United States for the period stated:—

	For month July, 1916. Barrels.	From Sept. 1, 1915, to July 31, 1916. Barrels.	From Sept. 1, 1914, to July 31, 1915. Barrels.
New York	7,490	332,730	560,148
New Orleans	4,276	123,972	102,489
Galveston	....	2,989	7,237
Maryland	....	2,024	7,529
Virginia	....	5,752	30,665
Michigan	1,526	57,761	35,714
Dakota	....	4,586	3,195
Georgia	....	8,532	52,000
Philadelphia	94	1,224	6,494
St. Lawrence	4	9,291	7,205
Laredo, Tex.	....	63	156
Massachusetts	....	.....	2
Eagle Pass	....	2	.....
San Francisco	....	61	12
Vermont	4	62	159
Buffalo	....	9,617	6,814
Totals	13,394	558,320	819,825

CHICAGO COTTONSEED OIL MARKET.

Chicago, Sept. 28, 1916.

Chicago consumers of cotton oil are looking for an improvement in the local market to their advantage, as a result of the forthcoming ginning report. This is expected to show a record-breaking quantity of cotton ginned, and if it does, they count on its having a strong bearish influence on the market. They also say that such a report will sweep away the doubts and fears of the mill owners over possible exorbitant prices for seed and bring offerings of plenty of oil from them at lower prices than have prevailed lately.

The market has been very dull, with limited offerings and prices strong. Some sales of pure Texas crude have been made at 69@70c., f. o. b. Texas basis. Texas P. S. Y. bleachable has been offered in Chicago at 77c. f. o. b. Chicago. There has been some buying of nearby crude and bleachable for September-October delivery at these levels.

LARD, TALLOW, STEARINE AND GREASES.

Lard.

The lard market closed moderately lower than it did a week ago. Leading packers are reported to have sold considerable stock, and this, with lower prices for hogs, had a depressing effect. Consuming demand has remained moderate, with export inquiry less pronounced. Middle West lard closed at 14.90@15.00c. per pound, which compares with 15.05@15.15c. a week

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ago. City steam was held at 14¾c. nominal. Compound lard was steady at 12⅛@12½c. per pound.

CHICAGO LARD MARKET.

Chicago, Sept. 27, 1916.

The Chicago lard market closed last week at an advance of 25c. per 100 pounds, compared to the previous week. Hog packing was 422,000 head, against 342,000 last year. The situation confronting this article is, indeed, a very unusual one from a supply and demand basis alone, for from a recent record-breaking accumulation of lard, stocks which were bulging out of the warehouses, the large packing industries have transformed this position through their enormous sales to Europe so that there is comparatively little lard left. Last week's huge orders were placed at considerable over the present market prices. Outside speculative trade has been practically selling on all advances on the theory of high prices alone, so that at the present there is quite a large short interest, and, no doubt, when these short sellers try to cover the real strength of the situation will make itself felt. Human foods of all descriptions have advanced by leaps and bounds, owing to the decided shortage of all crops. Cash lard was quoted Saturday at $14.75.

Exports for week ending September 16, 1916, 8,400 tierces.

Exports for corresponding week last year, 12,000 tierces.

The market was inclined to uneasiness at the outset Monday, but later developed firmness which eliminated all of this loss. January product met with moderate selling early, causing the easier price trend, but on the dip support from packers' brokers was encountered. Offerings in the nearby months were light, and there was a fair scattered commission house demand in evidence. Hog receipts were 32,000 head, and values weak to 5c. lower. Western packing centers all told had 79,150 hogs, against 55,100 last year. Lard shipments amounted to 731,000 pounds, compared with 1,215,000 pounds a year ago.

Lower prices were registered in lard Tuesday, this being attributable to the weakness in hogs and larger receipts than looked for. These factors brought about selling by longs. Some stop loss selling orders were uncovered on the way down. Local receipts totaled 18,000 head, and prices averaged 5c. lower. Western points received 92,500 hogs, against 73,000 last year. Lard shipments aggregated 2,000,000 pounds, compared with 2,350,000 last year.

Regular was quotable at 5@7½c. over September and closed steady at $14.52½. Refined was in moderate demand for export, with fair offerings. Loose lots were in light supply and in good demand; quotably steady at about 12½c. off October bid. Leaf lard was in fair supply and in moderate demand; quotable at $14.25. Neutral was in moderate supply, with a fair inquiry; prices steady at $15.37½@15.50 for No. 1, and $14.62½@14.75 for No. 2. September offerings were moderate, and the demand was fair. Sales were made at $14.32½@14.45 October lard demand was rather good and offerings were fairly large. Sales were made at $14.20@14.40.

Tallow.

The Russian Government is reported to have purchased through a leading Western packer 2,000,000 pounds of tallow at 10½@11c. per pound. Local sales of special tallow aggregated 150,000 pounds at 10c. per pound, an advance of ½c. from the previous sale, and 100,000 pounds at 10¼c. lower. Offerings are limited on spot. Our Chicago correspondent writes:—

Chicago, Sept. 27, 1916.

The Chicago fat market is very strong. Reports of crop shortages are having their effect on this market in addition to an increasing demand both domestic and foreign and prices are steadily rising. The tallow market has been given added strength, which it could not be said to have needed, by the purchase of a million pounds of tallow by the Russian government, the bulk of it to come from the United States and part from Argentina. This purchase, it is understood, was on the basis of 11c. New York, for prime quality, an advance of about 1c. over last week. Russia is also reported to have made large purchases of No. 1 packers' tallow at 10¼c. New York. A glycerine shortage in that country is believed responsible for these purchases. The market has advanced since these sales, and today edible is quoted at 11@11¼c. bid and 12c. asked and prime city at 11@11¼c.

Stearines.

Sales of two cars of oleo stearine are reported at 13½c. per pound, an advance of ½c. a pound over the previous sale. The market closed firm, with sellers asking 14¼c. per pound. Lard stearine closed at 15¾c. per pound nominal. Yellow grease stearine closed at 8¾@9c., with white grease stearine at 9@10c.

Our Chicago correspondent writes:—

Chicago, Sept. 27, 1916.

Stearines are strong, with offerings small. The heavy export demand of late has created a very strong situation in this market, and the surplus stock has been cleaned out. Since cotton oil available for hardened purposes seems to be very scarce, compounders have turned their attention to oleostearine, with the result that the product has advanced rapidly on only small trading. Packers are sold ahead and seem to have trouble supplying their own wants now, as the demand for week from a river point at 14¼c. f. o. b.; up to 14½c. asked here. Other quotations compound lard has expanded considerably recently. Several cars of prime oleo sold this nominal:—A white grease stearine, 10½@11c.; B white, 10@10¼c.; yellow, 9@9¼c.; lard stearine, 15½@15¾c.

Greases.

This market retains a strong position in sympathy with tallow and cottonseed oil. The market appears to be well sold ahead, and spot offerings are light and well held. Dealers quote white grease at 8½@8¾c.; yellow 8¼@8¾c.; house, 8¼@8½c., and brown, 7½@8c. per pound.

Our Chicago correspondent writes:—

Chicago, Sept. 27, 1916.

Greases are also strong, with prices tending higher. Trading is not very active because buyers are waiting for a drop in the market, while sellers are not offering freely because they are expecting further advances. Choice white has sold at 10¼c., but other offerings at this price were ignored by the buyers. Quotations on other grades are more or less unsettled:—A white, 9¾@10c.; B white, 9¼@9½c.; yellow, 8½@9c.; brown, 8@8¼c.; crackling, 8¾@9¼c.; house, 8¼@8½c.

OTHER VEGETABLE OILS.

CHINA WOOD OIL.—There were imports of China wood at New York this week, direct from Chinese ports. Imports at Seattle also are reported to be for the Eastern trade. There is a fair demand for this oil, and some sellers say that while reports have been heard about an inactive market, they have had no trouble in disposing of all the oil they could get hold of. The spot market is irregular in price, as quotations run from 11½c. to 12c. per pound for good-quality oil. Shipments are quoted at the same level as the spot market, though 11c. per pound can be done in some quarters.

COCONUT OIL.—There was a good inquiry from soap-makers and, with offerings by domestic producers moderate, the market closed firm and higher. A fair business was done early in the week on the basis of 12c. per pound, in tank cars, for both domestic and Manila oil. On Friday a round lot of Manila oil changed hands on the basis of 12½c. per pound, in tanks, f. o. b. New York, which price represents a net gain of ¾c., compared with a week ago. Advices from the Pacific Coast reported that producers did business on the basis of 11c. per pound, in tanks, f. o. b. San Francisco, but at the close this price was more or less nominal. In London the oil market was firm, closing at £47 10s. per ton, as against £46 per ton a week ago. Copra was offered at £36 5s. per ton, which compares with £36 10s. a week ago. Imported Ceylon oil was in scanty supply and nominal asking prices ranged from 13½c. to 13¾c. per pound, cooperage basis. Prime East India Cochin oil was firmly held by local holders and nominal prices ranged from 14c. to 15c. per pound, according to style of container.

CORN OIL.—There was little change in the position of the market for crude corn oil. Offerings were light and spot prices were wholly nominal throughout the week. Sales of several car-lots were reported on the basis of 10c. per pound, in barrels. The bulk of the output is still going to refiners on old contracts. With cottonseed oil holding around 10½c. and over, there is a good outlet for refined corn oil and the market for the latter ruled steady at $10.61 per 100 pounds for car-lots, in cooperage, being unchanged, compared with a week ago.

OLIVE OIL.—With cables from primary centers firm and higher the position of the local market for all grades of olive oil was firm. In some quarters prices were a shade higher, with offerings moderate. Denatured oil closed at 96@98c. per gallon, as to quality and seller. Prime green foots were quoted at 9½@9¾c. per pound, with sales noted at the inside figure.

PALM OIL.—Liverpool reported a firmer market, which was reflected here in slightly higher prices. It was rumored that soap makers here have secured permits for the release of several lots of palm oil from Africa. The spot market was quiet, but, with competing oils and tallow up, sellers took a firm view of the situation. Lagos palm oil closed at 9½c. per pound. Bonny closed at 9c., with bright red at 8½c. per pound.

PALM KERNEL OIL.—In sympathy with coconut oils, the market was firm, closing about ½c. higher. For spot palm kernel oil importers were asking 13c. per pound. Marseilles oil was offered for shipment at 12½c. per pound. Business was only routine in volume.

PEANUT OIL.—While the market was firm, prices underwent little change during the interval. There was a fair inquiry for both the crude and refined oil. Crude peanut oil was quoted nominally at 72@74c. per gallon. Refined or edible grades closed at 88@96c. per gallon, according to brand and seller.

RAPESEED OIL.—Demand for rapeseed oil was moderate, but the market ruled in sympathy with the situation abroad. English refined rapeseed oil held at 92@93c. per gallon, with business noted at the inside figure. Blown oil was quoted at 96@97c. per gallon. Off grades were offered at concessions.

SOYA BEAN OIL.—There was a good demand for soya bean oil and the market advanced in all quarters. The buying was by soap makers and refiners. A sharp advance in linseed oil brought out some inquiry from the paint trade. With nearly all indications pointing toward a season of high prices for linseed oil, the importers of soya bean oil anticipate active buying by paint manufacturers. Early in the week spot oil sold at 8½c. per pound, carlots in barrels, but later 9c. was paid in several instances and at the close the market was firmly established at this level. Seattle reported sales of round lots for November forward shipment at 8c. per pound, in tanks.

The price of extracted soya bean oil in bulk per hundredweight at Hull for the past week follows:—

	s.	d.
Monday	38	0
Tuesday	38	0
Wednesday	38	0
Thursday	38	0
Friday	38	0
Saturday	38	0

(Continued on page 84.)

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For Manufacture of
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Confectioners Supplies

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NAVAL STORES MARKETS

Unless otherwise specified, our prices are those prevailing in the New York Market, and are for large quantities. Complete prices current will be found on pages 115, 116 and 117, and table of contents on page 11.

Saturday Noon, Sept. 30, 1916.

NEW YORK.

SPIRITS OF TURPENTINE.—The market closed about unchanged from the previous week. An easier feeling at Savannah during the early trading resulted in sales as low at 46¼c., but a subsequent rise in the primary market was reflected in local prices and the close was steady at 47c. a gallon. Business here has not been very active. Paintmakers are not being pushed for products and are satisfied to keep their turpentine operations limited to actual wants. There is a feeling current that business will improve during October, particularly if the primary market shows a tendency to advance. Official advices report turpentine shipments for the week at Savannah as 3,119 barrels. Receipts were 2,291 barrels. Stocks were 23,197 barrels, as compared with 24,830 barrels last week, and 15,142 barrels last year. At Jacksonville the price was 43½c. a gallon at the close. London stocks on September 9 were 33,161 barrels, against 40,124 barrels in 1915, and 24,665 in 1914 for corresponding periods. The following table shows the range of spirits of turpentine in the local market for each day during the past week. The Savannah situation is reported below. A table of quotations is also noted:—

Monday	47 @—
Tuesday	46¼@46½
Wednesday	46½@—
Thursday	46½@47
Friday	47 @—
Saturday	47 @—

ROSIN.—The tone of the rosin market is reported firm with inquiry moderate. Prices are holding steady at lately prevailing levels and primary advices report a firm position in the South. Supplies are apparently passing into strong hands and rosin is looked upon by many as an attractive investment proposition at current values. Export shipments are making a satisfactory shoing, with England taking considerable quantities. An increase in domestic consumption is expected and the trade prospects, in general are believed to be favorable. According to official advices, total shipments at Savannah for the week were 9,111 barrels; receipts, 7,247 barrels, and stocks at the close were 85,530 barrels, compared with 84,896 last week and 60,295 barrels last year at this time. Final prices for the different descriptions of rosin in the local market are quoted ex-yard as follows:—

Common to good strained	$6.25 @—
B	6.30 @—
D	6.35 @—
E	6.55 @—
F	6.60 @—
G	6.70 @—
H	6.75 @—
I	6.80 @—
K	6.85 @—
M	6.90 @—
N	6.95 @—
W. G.	7.10 @—
W. W.	7.25 @—

TAR AND PITCH.—The local tar market retains a firm position with spot offerings light and sellers still experiencing difficulty in getting shipments from producing points. Prime kiln-burned tar is quoted at $7, and retort at 7¼@7½ for iron-bound barrels. Pitch prices are quoted at $4 per 200-pound barrel, gross weight, for black and $4.75 for green.

ROSIN AND PINE OILS.—Former prices are still effective for the different varieties of these oils. Demand for the lower grade rosin oils is reported fair, while the high grades are scarce and well held. Spot rosin oil is held at 38c. for first rectified, 48c. for second rectified, 60c. for third rectified, and 70c. for fourth rectified. Pine oil (yellow steam) is quoted at 60@62½c. a gallon, according to seller.

TAR OIL.—A fair miscellaneous consuming inquiry prevails for the different grades of this oil. Prices are well maintained at previous levels. Genuine distilled oil is held at 35@40c., and commercial at 21½@22c. a gallon.

SAVANNAH.

Savannah, Ga., Sept. 29, 1916.

SPIRITS OF TURPENTINE.—A shipment of 2,563 barrels to Liverpool on the steamship Ada took place on Tuesday. Demand has not been very aggressive, but offerings have continued light and a steady tone has prevailed. Closing prices were a shade higher than the previous week's close. Below is a table of prices, sales, receipts, shipments and stocks day by day:—

	Prices.	Sales.	Receipts.	Shipments.	Stocks.
Saturday	43¾@—	323	382	22	25,386
Monday	43¼@43½	405	333	196	25,523
Tuesday	43¾@—	169	641	2,856	23,208
Wednesday	43¾@44	239	247	26	23,439
Thursday	44 @—	196	576	8	22,797
Friday	43½@—	332	411	11	23,197

ROSIN.—The market has shown a steady tone all week and the former price range has been well maintained in all varieties. An export shipment of 6,150 barrels to Liverpool is noted. Below is a table of sales, receipts, shipments and stocks from day to day:—

	Sales.	Receipts.	Shipments.	Stocks.
Saturday	1,205	1,336	114	87,302
Monday	561	1,175	1,289	87,188
Tuesday	2,148	2,335	7,065	82,438
Wednesday	549	910	30	83,342
Thursday	1,666	141	500	84,290
Friday	1,238	1,350	113	85,530

ROSIN QUOTATIONS.

	Prices.	Same time last year.
W. W.	$6.00 @—	$6.00 @—
W. G.	6.50 @—	5.80 @—
N	6.35 @—	4.90 @—
M	6.30 @—	4.50 @—
K	6.30 @—	3.60 @—
I	6.25 @—	3.45 @—
H	6.25 @—	3.45 @—
G	6.22½@—	3.45 @—
F	6.20 @—	3.45 @—
E	6.05 @—	3.42½@—
D	5.90 @—	3.40 @—
B	5.85 @—	3.40 @—

RECEIPTS.

	Spirits.	Rosin.	Same time last year. Spirits.	Rosin.
This week	1,497	5,875	1,156	4,154
This month	9,900	34,419	10,777	29,406
This season, 1st	67,440	214,005	70,081	211,948
Other ports	500	3,000	4,000	1,000

SHIPMENTS.

	Spirits.	Rosin.	Same time last year. Spirits.	Rosin.
This week	3,086	8,884	2,622	11,400
This month	7,056	26,083	14,781	33,542
This season	51,772	206,144	81,605	257,986
Foreign	18,533	70,151	45,300	105,877
New York	14,416	64,547	15,666	79,813
Sundries	18,823	71,646	20,639	72,296
Stock April 1	7,620	72,832	22,666	105,333

JACKSONVILLE.

Jacksonville, Fla., Sept. 28, 1916.

SPIRITS OF TURPENTINE.—Spot prices were lower at the close after showing an irregular tendency earlier in the week. Demand is moderate and supplies are still on the increase. Below is a table of receipts, shipments and stocks from day to day:—

	Prices.	Sales.	Receipts.	Shipments.	Stocks.
Friday	43¼@—	541	511	415	36,958
Saturday	42⅝@—	404	452	...	37,410
Monday	42½@—	843	983	276	38,117
Tuesday	43 @—	214	179	485	37,811
Wednesday	43½@—	794	811	291	38,331
Thursday	42⅝@43	577	805	400	38,736

ROSIN.—Light price shading on the top grades is noted, but the lower sorts have ruled steady at former prices under an active demand. Below is a table of sales, receipts, shipments and stocks:—

	Sales.	Receipts.	Shipments.	Stocks.
Friday	2,156	1,745	1,019	161,139
Saturday	1,264	1,467	1,074	161,532
Monday	2,240	3,549	904	164,087
Tuesday	2,642	785	820	164,052
Wednesday	1,505	2,563	1,841	164,774
Thursday	2,605	2,741	765	166,750

ROSIN QUOTATIONS.

	Prices.	Same time last year.
W. W.	$6.55 @—	$6.15 @—
W. G.	6.40 @—	5.95 @—
N	6.25 @6.35	4.95 @—
M	6.22½@6.30	4.55 @—
K	6.20 @6.25	3.55 @—
I	6.10 @6.15	3.45 @—
H	6.10 @6.12½	3.40 @—
G	6.07½@—	3.37½@—
F	6.05 @—	3.35 @—
E	5.95 @—	3.35 @—
D	5.90 @—	3.30 @—
B	5.85 @—	3.30 @—

RECEIPTS.

	Spirits.	Rosin.	Same time last year. Spirits.	Rosin.
This week	2,778	9,678	2,814	7,7 6
This month	14,085	45,791	12,646	35,859
Since April 1	97,008	282,523	68,808	193,972

SHIPMENTS.

	Spirits.	Rosin.	Same time last year. Spirits.	Rosin.
This week	1,452	4,429	1,294	4,6 6
This month	11,649	33,140	7,633	32,180
Since April 1	81,171	264,067	53,818	204,111
Foreign	16,000	67,892	2,000	4,906
Domestic	65,171	196,175	51,818	199,206
Stocks				
Today	38,736	167,750	30,586	86,097
April 1	22,899	148,294	15,596	69,856
September 1	36,421	153,258	25,673	85,173

LONDON NAVAL STORES MARKET.

London, Sept. 23, 1916.

Turpentine.—A large business done in futures last week at enhanced prices, mostly in and out; that is to say, shifting of positions, selling spots and October-December and buying January-April and vice versa.

One firm of importers, however, has been a persistent seller in all positions of spot at 44s.@43s. 9d.; October-December, 44s.; January-April, 45s.@45s. 3d. Today the market has slumped. Spot, 42s. 6d., business done at 42s. 3d.; October-December, 43s. 3d. sellers; January-April, 44s. 3d. sellers. There is a rumor that Glasgow is sending turpentine to London, we cannot confirm it.

Rosins are firm, but the Archangel demand is slackening; there is a doubt whether the steamers available can carry the quantity booked in time for the open water. However, Russia is not the only country wanting rosin.

About 2,000 casks Spanish (4,000 barrels) were sunk by a torpedo last week.

LONDON QUOTATIONS.

Closing prices reported each day by cable are as follows:—

	Turpentine.	Rosin—American strained.	Rosin—Fine strained.
	s. d.	s. d.	s. d.
Saturday	43 0	21 6	28 0
Monday	43 0	21 6	28 0
Tuesday	43 0	21 6	28 0
Wednesday	43 0	21 6	28 0
Thursday	43 0	21 6	28 0
Friday	42 7½	21 6	28 0

LONDON TURPENTINE STOCKS.

Stock Sept. 9—	1916.	1915.	1914.
American	22,842	33,204	23,328
French	458	999	1,231
Spanish	9,661	5,921	106
	33,161	40,124	24,665

Delivered this week.	1,464	1,781	1,054
Since Jan. 1	61,203	66,412	69,062
	s. d.	s. d.	s. d.
Price Sept. 9	43 6	34 6	33 0
October-December	44 3	35 0	*
January-April	45 6	36 3	*
Savannah	45c.	36¾c.	*45½c.

* Nominal.

BUREAU OF CHEMISTRY TO PUSH FIELD WORK IN INTEREST OF NAVAL STORES

Appropriations by Congress Makes Possible Issuance of More Glass Standards to Assist Grading of Rosin.

Wahington, Sept. 29, 1916.

Of interest to the naval stores industry is an appropriation by Congress to the United States Department of Agriculture of $10,000 for "investigating the grading, weighing, handling, and transportation of naval stores, the preparation of definite type samples thereof, and for the demonstration of improved methods or processes of preparing naval stores, in co-operation with individuals and companies."

With this appropriation the Bureau of Chemistry will be able to continue its investigations and undertake additional field work. The appropriation also makes possible the issuance of more of the glass standards designed to assist in the grading of rosin. These types already have been adopted by the various boards of trade and chambers of commerce in the naval stores producing area, and have been accepted by the industry in general. Practically all rosin is now sold either on these standards or on types cut to conform to them. Efforts will be made to extend the use of these standards, which, it is believed, help to reduce to a minimum unintentional and fraudulent misgrading, and thus afford a measure of protection to dealers and consumers.

To this end sets of the glass standards have been deposited with the State supervising inspectors of naval stores of Georgia and of Florida, the New York Produce Exchange, New Orleans Board of Trade, and the Naval Stores Committee, National Paint, Oil and Varnish Association. These sets can readily be used for checking the accuracy of the cut rosin types, and for referring disputes on the grading of deliveries of rosin. Special attention will be given to determining the extent to which various conditions influence the grading of rosin. The object is to ascertain both the best conditions for grading rosin and also what differences are allowable where the same rosin is graded by different persons.

Effort also will be made to reduce as greatly as possible existing wastes of this industry, which, it is estimated, amount to nearly $3,000,000 annually. Some of these wastes, it is believed, can be eliminated readily through the adoption of simple improvements in producing methods. The aim is to benefit the producer by reducing costs of production and also by improving the quality of the product by standardizing of raw material to benefit such consumers as paint, varnish and ink makers, all of whom use these products extensively. Those engaged in the work will adopt as far as possible the methods used successfully in farm demonstration work. A canvass of the producing area will be made and such helpful advice as the department is able to secure will be placed at the service of those interested.

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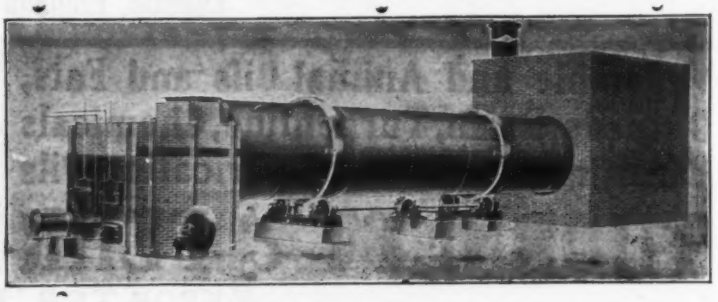

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Waterville Foundry & Mfg. Co., Waterville, N.Y.

OIL MARKET.

(Continued from page 31.)

ANIMAL AND FISH OILS.

COD OIL.—Closing quotations for all grades of cod oil show an advance of about 5c. per gallon for the week. There was a good inquiry from consumers, and with very little oil available the market developed further strength. Domestic cod oil actually sold at 67@68c. per gallon. The market for Newfoundland cod oil was wholly nominal, with few handlers in a position to offer round lots for spot and nearby delivery. The market closed at 70@71c. per gallon, nominal. Owing to the increase in the production of medicinal oil, production of technical grades will be very much smaller, according to authorities in the trade.

DEGRAS.—The market was steady, but closed about unchanged. Demand for degras was described as routine only, but with cables firmer no selling pressure was in evidence. English degras was offered on the spot at 6½@6¾c. per pound, as to quantity and seller. Domestic producers appear to be well sold up and prices were nominal.

LARD OIL.—The upward movement of pressing stock developed a strong undertone in the market for lard oils, especially the off grades. There was a fair inquiry from foreign and domestic consumers. Prime lard oil held at $1.08@1.16 per gallon. Nominal quotations on the off grades follow: Off prime, 96@98c.; extra No. 1, 87@92c.; No. 1, 82@86c.; No. 2, 75@80c. per gallon.

MENHADEN OIL.—The fishing during the past week, south of Cape May, was reported as fair, but the situation in the more northerly waters underwent no change. Northern factories all remained closed. With the output of crude menhaden oil well sold up, and competing oils tending upward, the market closed firm and higher. Scattered sales of Southern crude went through early in the week around 47½@48½c., f. o. b. factory, but toward the close 50c. was the general asking price, with offerings scanty. As the season is drawing near a close, sellers of oil are more reserved. Refined menhaden oil was firm and higher in sympathy with the crude. The demand, however, was routine only. Brown strained closed at 58@60c., with the light strained at 60@62c., the yellow bleached at 62@64c. and white bleached at 64@66c. per gallon.

NEATSFOOT OIL.—The market was firmer, reflecting the strength of fats and greases. There was a moderate inquiry from consumers, most of the call being for the so-called prime and dark grades. Twenty-degree cold test was quoted at $1.05@1.15, with 30-degree at $1@1.05 and 40-degree at 95c.@$1. Prime oil was quoted at 90@94c., with dark at 84@86c. per gallon.

RED OIL.—Following an advance of ½c. per pound in the market for tallow, reported late last week, a firmer feeling prevailed among handlers of red oils and in some quarters asking prices were slightly higher. There was a moderate inquiry for the saponified. Saponified red oil closed at 8¾@9c. per pound, with the distilled at 8½@8¾c. per pound, according to brand.

STEARIC ACID.—There was a firmer tone to the market, due to the increase in the cost of raw materials. Consumers showed more interest and sales were reported at higher prices. At the close the triple-pressed was quoted at 14@14½c. per pound, with the double at 13@13½c. and the single at 12@12½c.

SOD OIL.—While the tone was firm, prices closed about unchanged in a rather inactive market. Dealers quote

HIGH GRADE
COCONUT OIL
Cochin Type
MADE IN AMERICA
F. F. A. Test Under ¼%
Pure, White, Sweet Oil
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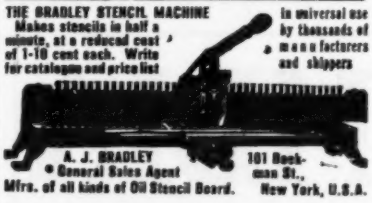

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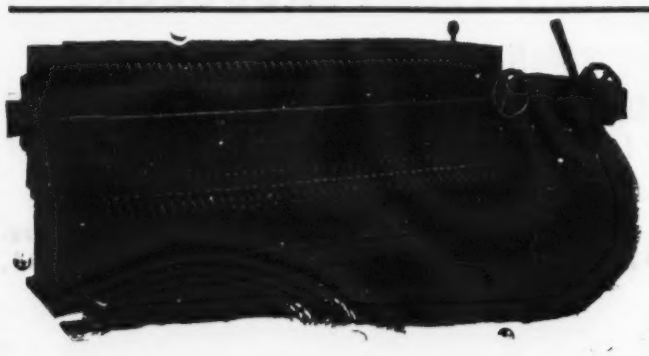

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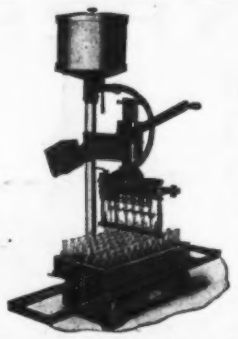

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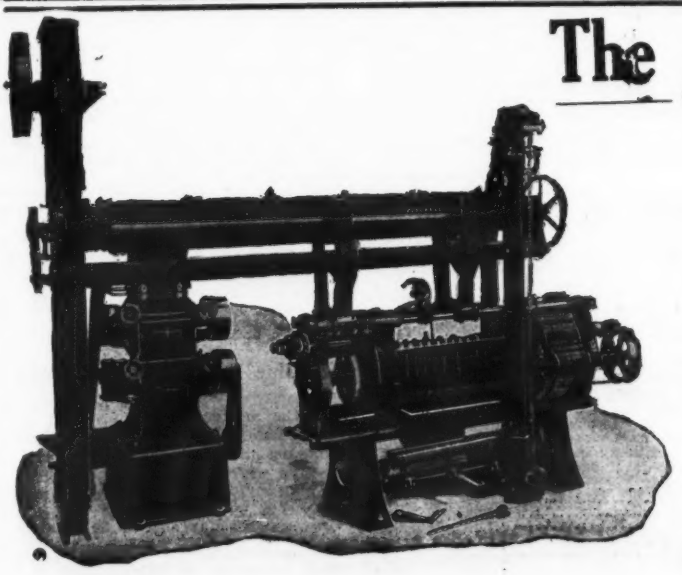

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The **Expeller** is automatic in operation. The seed is fed in and the cake discharged continuously twenty-four hours a day and six days a week.

The **Expeller** can be set on any floor in the mill and can be operated by belt or individual motor drive.

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For Mixing Liquid and Paste Materials

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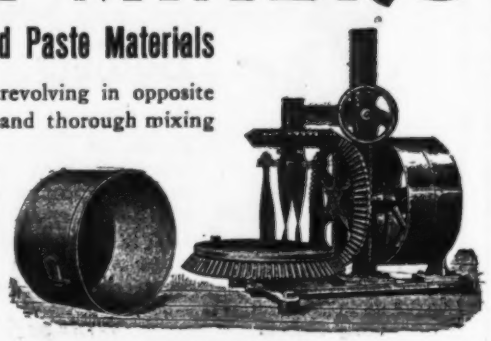

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Manufacturer of Paint—Drug—Chemical Machinery

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Do you handle liquid money (oil) in a lax manner, or do you keep it properly, as the actual cash that it is?

The above insert illustrates one method of handling paint oils. It is not necessary to dwell on the results obtained under these conditions, other than to say that they total extreme dissatisfaction for all concerned.

The lower insert illustrates an actual installation of a

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Note the compactness and cleanliness made possible through the use of this system—and there are many other advantages, such as convenience, safety, accuracy and economy,

Another attractive feature is that our systems are flexible, so that the cost of properly systematizing the handling of your paint oils is in exact proportion with your particular requirements.

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S. F. Bowser & Co.

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from 7 to 7½c. per pound, as to quality.

SALMON OIL.—Several car lots of salmon oil were offered to the trade on the basis of 60c. per gallon, in tanks, f. o. b. New York.

SPERM OIL.—Quotations for crude sperm oil were wholly nominal in the absence of free sellers. Refined sperm oil was firmer, but quotably unchanged. The strength was in sympathy with competing oils. Quotations for refined sperm oil ranged from 75 to 80c. per gallon, as to cold test and quantity.

WHALE OIL.—Offerings were light and, with competing oils tending toward higher levels, the market was firm, with prices for crude whale oil more or less nominal. The ideas of local sellers were around 60c. per gallon for the No. 1 crude. Refined whale oil was inactive, but firm and higher. Dealers quote from 64 to 68c. per gallon, the price depending upon quality.

TALLOW OIL.—Closing prices in the market for tallow oil were more or less nominal, owing to the almost constantly changing conditions of tallow, greases, etc. Acidless tallow oil was quoted nominally at 90@92c. per gallon. The demand was routine only.

Olive Oil vs. Cottonseed Oil in Argentine—Plan to Offset Attacks.

Washington, Sept. 29, 1916.

Reports from Buenos Aires indicate that American cottonseed oil, as a foodstuff, gives promise of being used to a considerable extent in that country. It is reported, however, that the importers of olive oil from Italy and Spain in Argentina, have been attempting to prevent the growth of trade in American cottonseed oil by publishing statements in the newspapers to the effect that cottonseed oil as a foodstuff, is not healthful. It has been suggested here that the Department of State and the Department of Agriculture take up with the American cottonseed oil producers the consideration of a plan to offset this attack upon the industry.

In normal times, cottonseed oil sells in the Argentina market at from $2.76 to $2.97 per ton kilos, and that imported olive oil sells from $3.82 to $4.25 for a similar quantity. In the opening of the European war freight rates on cottonseed oil from the United States increased several hundred per cent. because of the lack of facilities for transportation. The freight between Italy and Spain and the Argentina, however, only increased about 10 per cent. because the facilities of transportation continued almost the same. Recently, however, freight rates between the United States and Argentina have fallen with the resultant increase in the price of cottonseed oil in Argentina. According to the latest reports it is expected that within two or three months the price of cottonseed oil in that country will again be lower than the price of imported olive oil.

Olive oil is imported in tins and in barrels into Argentina. It is reported that the olive oil imported in barrels is adulterated there with cottonseed oil so that the mixture contains from 10 to 20 per cent. cottonseed oil. It is also said that about 50 per cent. of all the cottonseed oil imported into Argentina is now used for mixing with olive oil. The resultant product is sold under the name of olive oil to the consumers, however.

Duluth Closing Telegram.

Duluth, Minn., Sept. 29, 1916.

Duluth close today:—Cash, $2.30½@2.31; arrive, $2.30½; September, $2.29; October, $2.29; November, $2.29½; December, $2.28½; May, $2.33.

Receipts:—Domestic, 4,006 bushels; bonded, none; shipments, domestic, 11,014 bushels; bonded, none. Stocks in store, domestic, 722,000 bushels; decrease in two days, 7,000 bushels. Bonded, 78,000 bushels; increase in two days, 1,000 bushels.

BUENOS AIRES FLAXSEED MARKET.

Sessions in the linseed market have seen unusual developments during the interval. Values have shown a readiness to rise recently, owing to reports that the drought was unbroken and was causing widespread damage. There was a tendency to disparage such advices, but well authenticated reports came to hand this week and revealed that the linseed crop was badly affected. Whole sections in the North, where a large yield was looked for, will produce nothing. From 70 per cent. to 75 per cent. of the whole northern area is affected, and returns from that section are sure to be insignificant. Values for linseed took a sharp upturn on the confirmation of this condition, and the situation looks very strong at present.

Shipments for the week and season to date compare as follows:—

	Present week. Bushels.	Last year. Bushels.
United States	319,000	105,000
United Kingdom	82,000	53,000
Continent	67,000	323,000
Totals	468,000	481,000

	Season to date. Bushels.	Last year. Bushels.
United States	7,794,000	10,137,000
United Kingdom	5,861,000	8,277,000
Continent	8,953,000	12,894,000
Totals	22,608,000	31,308,000

Visible is 2,155,000 bushels, against 2,038,000 bushels last week, and 980,000 bushels last year.

The following table of prices shows the opening and closing prices of November seed at Buenos Aires. The quotations are on a basis of 96 per cent. pure:—

	Open.	Close.
Saturday	$1.58⅞	$1.58⅞
Monday	1.59½	1.59½
Tuesday	1.59	1.61½
Wednesday	1.61½	1.64⅝
Thursday	1.66⅝	1.66⅛
Friday	1.78⅛	....

HIGH GRADE PEANUT OIL WILL BE MOST PROFITABLE

Permanent Demand Will Come If Product Meets Requirements—Preferred by Many to Cottonseed Product, if of High Quality.

Washington, Sept. 29, 1916.

To be a profitable article of manufacture under normal conditions, peanut oil must be of a higher quality than that which is now being produced in this country, the experts of the Department of Agriculture state. Ordinarily it cannot compete in price with cottonseed oil and a permanent demand for it, therefore, must come from persons who are willing to pay more for an article that suits them better.

At the present time, the price of cottonseed and all its products are so high that peanut oil can be put on the market at about the same price as cotton oil. This has led many mill owners to consider the advisability of making peanut oil and the increased acreage in peanuts in the South especially in the territory infested with the boll weevil, is another strong inducement for the development of new outlets for the crop. In a recent publication of the United States Department of Agriculture, however, H. C. Thompson and H. S. Bailey point out that the relative costs of production are such that, except under unusual conditions, a higher price must be asked for peanut oil than for cottonseed oil. Unless the grade of the peanut product is raised, therefore, there will be little inducement for anyone to purchase it.

Peanuts at 70 Cents a Bushel.

Investigations, including labor and the interest on the investment, show that it costs the farmer from $20 to $25 to produce thirty-five bushels of peanuts—the average yield per acre of the Spanish variety which is the one best suited for oil making. At 70 cents a bushel this means a revenue from the nuts of $24.50 an acre. In addition, the hay is worth about $10, making $34.50 in all. These investigators state as one of their conclusions that farmers cannot afford to grow peanuts for sale unless they are reasonably sure of receiving at least 70 cents a bushel.

On the other hand, if peanut oil is to be sold in competition with cottonseed oil, even under the present unusual conditions, the mill man cannot pay more than 70 cents, and at the prices which have prevailed in the past, he cannot afford to pay that. At 70 cents, a ton of Spanish peanuts costs $46.66 and should yield, under careful treatment, 80 gallons of oil and 750 pounds of meal. The meal probably can be disposed of for $11.25; the oil at 60 cents a gallon is worth $48. This leaves the mill man $12.59 a ton, out of which he must meet his manufacturing and selling charges and take his profit. As cottonseed oil frequently sells for about 45 cents a gallon, it is obvious that ordinarily the two oils cannot compete on the basis of price. Another matter which must be considered is that by the methods in use many mills are obtaining a yield of only 65 gallons of oil from a ton of peanuts. With such a yield and with the oil at 60 cents a gallon, a considerable loss may be expected.

Demand for Edible Peanut Oil.

A high-grade peanut oil has qualities which for certain purposes, such as for salad dressing and for cooking, cause it to be preferred by some to the cotton product, state the experts. In Europe there is a considerable demand for the edible peanut oils and it is, to a great extent, only the inferior grades that are imported into this country, where they are used chiefly in the manufacture of oleomargarine. The peanut oil imported during the year ending June 30, 1914, was valued at 67 cents per gallon. A small part of this was high grade edible oil which probably sold for a considerable higher price than the average for all of the oil imported. If a high grade American oil is placed on the market at a little lower price than that commanded by the best of the imported oils, it is possible that a steady demand for it might be built up which would be quite independent of the cost of cottonseed oil.

In this connection it is pointed out that in the production of a high-grade edible peanut oil the peanuts must be thoroughly cleaned, shelled, blanched and degermed. In the ordinary cottonseed mill this will require the installation of additional machinery, involving an expense which is hardly justified unless there is reasonable assurance of a permanent demand for the product. In the same way, before the farmer goes in heavily for peanuts for oil purposes, he should assure himself that the mills will be able to pay a fair price for his crop. This consideration, of course, does not effect the agricultural value of peanuts in other respects.

In view of these facts the specialists in the Department of Agriculture believe that the industry can be promoted best by devoting attention to the production of high-grade oil that will sell on its merits. The low grade oils for use in soap, etc., can be made most profitable from low grade nuts and the waste of peanut shelling and peanut butter making establishments.

Gasoline Freight Hearing Ordered.

Washington, Sept. 29, 1916.

In the matter of gasoline from Coffeyville, Kan., the Interstate Commerce Commission has ordered a hearing concerning the propriety of the increases and the lawfulness of the rates contained in E. B. Boyd, agent, tariff, and the effective date of these schedules is postponed pending hearing and decision. The operation of the tariffs are suspended until December 30, 1916.

Petroleum Market and Reviews

Saturday Noon, Sept. 30, 1916.

In the last issue of the Reporter reference was made to the feeling that there would be a turn in the market before very long and that higher prices to the producers of crude petroleum would be paid by the pipelines. It was not generally anticipated that the change would come at once, although it was seen that with the export demand remaining at a war-time pitch there could be no further declines unless the unexpected happened.

The reverse was true—the expected did happen, but prices went up instead of down, and Pennsylvania set the pace this time. The honors for price changes for the current year have so far been vested in Kansas-Oklahoma, which described a parabolic glide down the hill towards low levels with the ease of a greased eel on a hard-pine plank.

The upward trend of the market for crude was crystallized on Thursday when the principal grades of Eastern crude oil were pushed up 10 cents a barrel, with the new prices as follows:— Pennsylvania crude, $2.40; Mercer black, Corning and Newcastle, $1.90; Cabell, $1.92; Somerset, $1.75. Only 5 cents was added to Ragland, the heavy oil of the Eastern field, making it 80 cents.

Oilmen held that the vast accumulation of crude oil which repeated advances failed to bring out late last year, but which came when the market began to drop last spring, had found its way to the refineries, which were again in need of crude.

Reports from the several fields indicate that production is keeping up to the pace established some time since, despite the cutting off of new wells and the cut-down in takings by the pipelines. The consequence is that now Pennsylvania has set the pace the other big producing fields may be expected to do likewise.

More big wells are reported the past week in the Kansas field than during the past month, with the Kansas Oil Company bringing in a 10,000-barrel producer at 28-27-4 Augusta on the Scully farm, and the Spencer Oil Company bringing in a 2,000-barrel well in the Blackwell district.

There seems to be no change in the shortage on the Pacific Coast, where price increases were recently made. Production in the Mid-Continent, Wyoming and Kentucky fields, however, does not seem to bear out the alarmist prediction made recently by W. R. Hamilton at the meeting of the American Institute of Mining Engineers at Globe, Ariz., that unless some method can be found to increase the production the shortage now faced on the Pacific Coast will become general.

The output of mineral oil for foreign consumption as shown by the export statistics prepared for the Bureau of Foreign and Domestic Commerce indicates that there is no let-up, but rather an increase, in demand from overseas. The exports of crude oil for the month of August, 1916, were 17,978,132 gallons, as compared with 15,449,217 for the same month last year, while the eight months' totals aggregated 118,295,909 for the period ending in August this year, as compared with 103,016,954 in 1915.

REFINED PRODUCTS.

Locally the refined products markets remained in statu quo up till Saturday. There was a good demand for refined and gasoline and the lighter distillates, both for export and for domestic consumption. The movement abroad of illuminating oil still shows a decrease, as the demand from abroad, owing to war-time conditions and the lack of available carriage by sea, is manifested in decreased consumption, especially in the Far East. The exports of illuminating oil for August reached the total of 73,922,852 gallons, as compared with 80,259,892 for the same month last year, while the eight months' totals this year were but 548,641,394, as compared with 575,582,949 last year.

The demand for refined products is well indicated by the announcements of capacity increases on the part of many refineries, while a special dispatch to the Reporter from Texas indicates a general movement on the part of refineries there to increase both the number of plants and the daily producing capacity.

There have been a number of reductions in the price of gasoline since our last market report. Reductions, tank wagon basis, have been put into effect by the Texas Company in Southern and Rocky Mountain territories, with the following rates prevailing today:

Colorado, 21c. minimum, 24c. maximum; Montana, 22 to 23½c.; Wyoming, 18½ to 22½c.; Florida, 21 to 23½c.; Georgia, 21 to 24c.; Mississippi, 19½ to 21½c.; Alabama, 21½ to 25c.

In Denver the Continental Oil Company has reduced the price of gasoline, tank, wagon basis, 1c. a gallon to 21c., effective throughout Colorado, Utah, Idaho, New Mexico and Montana.

Dispatches from Washington state that many complaints have been received by officials of the Department of Commerce that dealers in various cities have diluted gasoline to such a point as to greatly reduce its value. Secretary Redfield has gone on record as asserting that the department would do everything within its power toward stopping this pernicious practice, and he will confer early next week with Director Stratton of the Bureau of Standards with a view to putting an end to the adulteration.

Whether or not a government standard can be established is a question, as the exact chemical constituency of the various petroleum products has never been standardized, and it is said that some of the officials of the bureau believe it an impossible task. A series of tests, however, is said to be in progress in the hope of arriving at a maximum and minimum specific gravity, between which points gasoline could be rated as a pure product. If such a standard should be arrived at it would be necessary for Congress to take action toward legalizing it.

As an indication of the increased production of casinghead gasoline, the reports for the year 1915 show an increased production of 22,712,033 gallons marketed, an increase of 53 per cent. over 1914. The daily plant capacity increased more than 30 per cent. in the same period.

Illuminating oil exports totaled 17,634,190 gallons for the week, as compared with 11,513,555 gallons for the previous week. The total exports since the first of the year were 321,028,160 gallons, as compared with 272,619,005 for the same period in 1915.

Naphtha clearances during the interval were 6,028,660 gallons, as compared with 1,962,095 gallons for the week before.

Gasoline shipments were 113,790 gallons, comparing with 637,285 gallons during the previous week.

Charters for the week include the British tank steamer Saxonian, 2,978 tons refined, 1,200,000 gallons, Philadelphia to the United Kingdom, private terms (October); two Luckenbach steamers, about 100,000 cases each, Port Arthur to Brazil or River Plate ports, 80c; each (October); schooner Normandy, 2,500 barrels refined, New York to Rouen, private terms (October).

MINERAL LUBRICANTS.

The bulk of the production of mineral lubricants is still sold under contract for the balance of the year, and in some instances for longer periods. Spot demand continues strong, but little business is done owing to lack of available supplies. The export demand for mineral lubricants is still climbing. The figures for August show a total of 27,457,423 gallons exported, as compared with 22,715,614 last year for the same month, while the eight months' figures total 180,822,794 for the period ending in June of this year, as compared with 164,282,758 for 1915.

CLOSING QUOTATIONS.

Crude at the Wells.

Pennsylvania, Cabell, Mercer black, New Castle, Corning and Somerset advanced 10c. and Ragland 5c. January 28. Pennsylvania, Mercer black, New Castle, Corning and Somerset advanced 5c. and Ragland 2c. February 21. Pennsylvania, Mercer black, New Castle and Corning advanced 10c., Cobalt and Somerset 7c., and Ragland 3c. March 6. Pennsylvania, Mercer black, Cabell, New Castle, Corning and Somerset advanced 10c. and Ragland 8c. March 17; July 29. Pennsylvania, Mercer black, Corning, New Castle, Cabell, Somerset, Ragland reduced 10c.; all grades of Pennsylvania crude reduced 10c. August 3 except Ragland, reduced 5c.; August 10 all except Ragland reduced 5c.; August 15 all Pennsylvania grades except Ragland reduced 5c. All grades of Pennsylvania increased 10c. September 27, except Ragland, which was increased 5c.

Wooster, North and South Lima and Indiana advanced 10c. January 3 and 5c. January 22 and 27 and February and March 7 and 10c. March 16; Wooster was advanced 10c. May 19; Princeton and Illinois advanced 10c. January 3 and 5c. January 27; there was an advance of 10c. in both grades February 16 and March 16; Plymouth advanced 5c. January 21 and 27, 10c. March 7, 5c. March 13 and 10c. March 16; North and South Lima, Indiana, Wooster, Princeton, Illinois and Plymouth reduced 10c. July 28; August 1, North Lima, South Lima, Indiana reduced 5c.; Wooster, Illinois, Princeton and Plymouth reduced 10c.; August 4, North and South Lima, Wooster, Illinois, Indiana, Princeton and Plymouth reduced 10c.; August 14, North Lima, South Lima, Indiana, Illinois, Wooster, Illinois and Princeton reduced 5c.; Plymouth reduced 20c.

Oklahoma-Kansas advanced 5c. January 20 and 26 and March 4, 11 and 14, reduced 10c. July 24; Healdton advanced 5c. January 7, 21 and 27; Kansas and Oklahoma reduced 10c. August 1; reduced 10c. to $1.15 on August 7; to $1.05 on August 12; to 95c. on August 15; to 90c. on August 26.

Corsicana light, Electra and Henrietta advanced 5c. January 21 and 27, 10c. March 6 and 5c. March 13, reduced 10c. July 24; Corsicana heavy advanced 5c. January 7, 21 and 27; Thrall, Strawn and Moran advanced 25c. January 27, 10c. March 6 and 5c March 13, reduced 10c. July 24; all grades of North Texas reduced 10c. July 14; Corsicana light, Electra and Henrietta reduced 10c. August 1; August 8 Corsicana, Henrietta, Electra, Thrall, Strawn and Moran reduced 10c.; August 15 all grades of light Codda and De Soto reduced 10c.; August 16, De Soto reduced 10c.; August 14, Corsicana light, Henrietta, Electra, Thrall, Strawn and Moran reduced 10c.; Corsicana heavy and Healdton, 5c.; Corsicana light, Henrietta, Electra, Thrall, Strawn and Moran reduced 5c. August 26.

All grades of Caddo advanced 5c. January 25 and 28; the lighter Caddo grades advanced 10c. March 7, 15 and 27; Caddo, heavy reduced 10c. July 15; all grades of Caddo reduced 10c.

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July 25; Caddo heavy reduced 5c. July 29. August 1 all grades of Caddo and De Soto reduced 10c.; August 3, Caddo cut 10c., De Soto cut 10c.; August 8 Caddo cut 10c.; Vinton, Sour Lake and Humble reduced 10c. August 15 all grades of light Caddo and De Soto reduced 10c.; August 16 De Soto reduced 10c. July 14, 5c. July 28; De Soto and Crichton advanced 5c. January 25 and 27; De Soto advanced 10c. and Crichton 5c. March 8 and 15; Crichton reduced 15c. June 15; Crichton light reduced 10c. July 15, 5c. July 29; De Soto advanced 10c. March 27; reduced 10c. August 1; reduced 10c. August 8; Batson, Dayton, Saratoga and Spindletop reduced 10c. July 18; Markham reduced 5c. July 28; Jennings reduced 5c. August 2.

California quotations for the Kern River, Midway-Sunset, McKittrick, Lost Hills-Belridge and Coalinga were advanced 5c. February 4 and 5c. April 1 and 5c. July 5. Advanced 5c. September 21.

Canada advanced 10c. January 3 and 5c. January 22 and 28 and February 7. Several cuts were made in August, making the price 6½ August 10, 1.85c. plus the government bounty of 5½c.; August 14, Canada reduced 5c.

The following prices are the prices paid by the pipe lines for crude as delivered from the wells, with a comparison for the corresponding period for 1915:—

EASTERN STATES.

	1916.	1915.
Pennsylvania	₱ bbl.$2.40	$1.70
Cabell, Pa.	1.92	1.30
Mercer, black	1.90	1.26
New Castle, Pa.	1.90	1.26
Corning, Ohio	1.90	1.18
Somerset, Ky.	1.75	1.08
Ragland	.80	.65
CENTRAL WEST.		
Wooster, Ohio	1.60	1.30
North Lima, Ohio	1.43	1.08
South Lima, Ohio	1.43	1.03
Indiana	1.28	.93
Princeton, Ind.	1.47	1.09
Illinois	1.47	1.09
Plymouth, Ill.	1.08	..
OKLAHOMA-KANSAS.		
*All grades except Healdton	.90	.80
Healdton, 32 deg. and above	.40	.30

* Cushing oil is nearly all bought on contract at $1.20@1.90.

NORTHWESTERN LOUISIANA.

Caddo, La., 38 deg. and above	.90	.75
35 to 37.9 deg.	.80	.65
32 to 34.9 deg.	.75	.60
heavy	.65	.50
De Soto	.80	.65
Crichton, light	.60	.55
NORTH TEXAS.		
Corsicana, light	.90	.80
heavy	.40	.45
Electra	.90	.80
Henrietta	.90	.80
Strawn	.90	.70
Thrall	.90	.70
Moran	.90	..
GULF COAST.		
Humble	.65	.50
Saratoga	.70	.45
Sour Lake	.65	.50
Spindletop	.70	.45
Batson	.70	.45
Vinton	.65	.45
Dayton	.70	.40
Goose Creek	.70	.50
Jennings	.65	.45
Markham	.65	.50
Edgerly	.70	..
CALIFORNIA.		
Kern River, Midway-Sunset, McKittrick, Lost Hills-Belridge, Coalinga.		
14 to 17.9 deg.	.68	..
18 to 18.9 deg.	.69	..

Prices are 1c. higher per barrel for each increase in gravity of one full degree above 18 degrees.

25 to 25.9 deg.	.77	..

Prices are 2c. higher per barrel for each increase in gravity of one full degree above 25 degrees.

Ventura county.

25 to 25.9 deg.	.77	..

Prices are 2c. higher per barrel for each increase in gravity of one full degree above 18 degrees.

Fullerton and Whittier.

14 to 17.9 deg.	.68	..
18 to 18.9 deg.	.69	..

Prices are 2c. higher per barrel for each increase in gravity of one full degree above 18 degrees.

25 to 25.9 deg.	.77	..

Prices are 2c. higher per barrel for each increase in gravity of one full degree above 25 degrees.

Oil of above 37 deg. gravity 6c. higher, with increases of 3c. a barrel for each full degree above 37 deg. gravity.

CANADA.

Canada	1.83	1.38
Petrolia	1.88	..
Oil Springs	1.95	..

Export Quotations.

ILLUMINATING OILS.

Quotations are based on the following quantities:—Bulk, tank steamer lots, ranging from 30,000 to 70,000 barrels, according to steamer capacity; barrels, cargo lots, about 30,000 barrels; cases, cargo lots averaging from 10,000 to 20,000 cases.

	S. W., 110 test 1916.	S. W., 110 test 1915.
Bulk, New York	4.50	4.00
Barrels, New York, cargo	8.35	7.50
Cases, New York	10.75	9.75

Prices for water white oil (150 test) are 1c. higher than those for standard white.

Quotations for cases were advanced 25 points January 4, and 25 points June 1, no change being made in bulk or barrels. All quotations were advanced 25 points January 15. Barrels were marked up 5 points March 31, cases and bulk being unchanged; barrels were marked up 15 points August 4. All grades and all packages marked down 15 points, August 11. Marked down 10 points, August 14. Refined marked down 25 points September 5; 25 points marked down September 12.

	Cases 100 test.
Two, five, low screw lots	10.75
3,000 to 10,000 cases	11.00
1,000 to 3,000	11.05
700 to 1,000	11.10
500 to 700	11.15
400 to 500	11.25
300 to 400	11.35
200 to 300	11.65
100 to 200	12.25
10 to 100	12.75

Quotations for 150 test oil are 1 cent above those for 110 test.

NAPHTHAS, GASOLINE, ETC.

	10-gallon drums—Under 100 cases. 1916.	1915.	100 cases and over. 1916.	1915.
Benzine, 59@62 deg.	33¼	25⅝	32¼	25¼
Gasoline, stove	33½	28½	33	28
Naphthas—				
Auto, 68@72 deg.	37	31	36¼	30¼
73@76 deg.	41	35	40½	34½

	In cans and cases—Under 100. 1916.	1915.	100-199. 1916.	1915.
Benzine, 59@62 deg.	28½	20⅝	28¼	20½
Gasoline, stove	28⅝	23½	28½	23½
Naphthas—				
Auto, 68@72 deg.	32¼	26	32	25⅝
73@76 deg.	36¼	30	36	29⅝

	200-299— 1916.	1915.
Benzine, 59@62 deg.	28	20¼
Gasoline, stove	28¼	23
Naphthas—		
Auto, 68@72 deg.	31¾	25¼
73@76 deg.	35¼	29½

All grades of the naphthas were advanced 2c. January 14, with the exception of stove gasoline, which was marked up 1c. All quotations for the naphthas were advanced 1c. February 5 and 25 and ¼c. June 1. All quotations for naphthas reduced 1c. August 11.

Jobbing Quotations.

	1916.	1915.
Crude oil, steel barrels	15	..
wooden barrels	18	13½
Fuel oil, 28@31 deg., in barrels	9	8
Gas oil, 34 deg., distilled	9¼	9
ILLUMINATING OILS.		
130 fire test, S. W., bbls.	11½	11½
150 fire test, W. W., bbls.	12	12
tank wagons	9	8
NAPHTHAS, GASOLINES, ETC.		
Motor gasoline (garages only)		
steel barrels	22	16
Motor gasoline, to consumers	24	20
Naphtha, V. M. and P. deod., steel barrels	22	16
wooden barrels	24	17
Gasoline, gas machine	37	28
73@76 deg., steel barrels	31	25
wooden barrels	34	27
70@72 deg., steel barrels	29	23
wooden barrels	32	26
68@72 deg., steel barrels	28	22
wooden barrels	31	24

Jobbing quotations for all the naphthas were advanced 1 cent January 5. Motor gasoline was advanced 1 cent February 7. All quotations were marked up 1 cent March 2. Motor gasoline and V. M. and P. deodorized reduced 1 cent August 7; reduced 1 cent September 7.

EXPORT STATISTICS.

Weekly exports of petroleum products, with totals since the first of the year and comparisons for the corresponding period of 1915, follows:—

NEW YORK.

	Current week, gallons.	Since January 1, 1916, gallons.	Same time last year, gallons.
Crude	150,000	5,912,645	7,992,220
Refined	17,634,190	321,028,160	272,619,005
Naphtha	6,028,660	84,648,160	101,674,265
Benzine	.....	2,200,830	* .....
Gasoline	113,790	12,519,880	* .....
Distillate	.....	27,400	* .....
Fuel & gas oil	1,869,700	50,286,215	62,705,125
Residuum	.....	254,010	* .....

* Not recorded.

PHILADELPHIA.

	Current week, gallons.	Since January 1, 1916, gallons.	Same time last year, gallons.
Refined	4,305,265	85,081,710	87,147,645
Naphtha	.....	34,790,625	20,306,375
Fuel oil	.....	31,639,415	16,818,190
Gas oil	.....	36,045,920	14,567,635
Gasoline	2,167,580	17,832,750	.....
Distillate	.....	7,128,085	* .....

BOSTON.

	Current week, gallons.	Since January 1, 1916, gallons.	Same time last year, gallons.
Refined	11,555	120,645	53,125

BALTIMORE.

	Current week, gallons.	Since January 1, 1916, gallons.	Same time last year, gallons.
Refined	.....	241,365	82,235
Gasoline	.....	26,735	* .....
Fuel oil	.....	762,160	* .....

NEW ORLEANS.

	Current week, gallons.	Since January 1, 1916, gallons.	Same time last year, gallons.
Crude	.....	14,046,560	12,152,865
Refined	1,892,650	67,690,190	64,465,835
Naphtha	2,307,720	15,929,980	12,539,550
Gasoline	.....	22,735,745	* .....
Fuel oil	1,302,930	1,822,130	3,423,495
Gas oil	.....	6,990,356	1,000

PORT ARTHUR.

	Current week, gallons.	Since January 1, 1916, gallons.	Same time last year, gallons.
Crude	.....	11,791,247	.....
Refined	1,117,735	48,278,347	.....
Naphtha	.....	7,706	.....
Gasoline	104,501	7,006,636	.....
Fuel oil	10,989,966	172,919,587	.....
Gas oil	.....	161,756	.....

* Includes gasoline.
† Not separately recorded.

SAN FRANCISCO.

	Current week, gallons.	Since January 1, 1916, gallons.	Same time last year, gallons.
Crude	908,835	22,947,120	73,226,660
Refined	244,220	34,116,650	76,885,820
Naphtha	30,000	86,170	4,574,690
Gasoline	275,310	5,871,525	†.....
Benzine	271,065	2,027,100	†.....
Fuel oil	900	181,732,580	64,422,840
Gas oil	.....	192,395	6,821,270
Distillate	142,180	3,182,120	†.....

* Includes gasoline and benzine.
† Not separately recorded.

TOTAL EXPORTS.

	Since January 1, 1916, gallons.	Same time last year, gallons.
Crude	54,607,372	95,789,152
Refined	556,547,087	548,656,290
Naphtha	135,354,435	143,942,408
Gasoline	66,978,856	†.....
Benzine	4,017,765	†.....
Distillate	10,237,905	†.....
Fuel and gas oil	482,503,514	391,952,743
Residuum	254,010	†.....

† Not separately recorded.

Foreign Quotations.

AMERICAN REFINED OILS.

	London, pence.*	Liverpool, pence.*
Monday	13½	13¼
Tuesday	13½	13¼
Wednesday	13½	13¼
Thursday	13½	13¼
Friday	13½	13¼
Saturday	13½	13¼

*Quotations are on the basis of English gallons in barrels of 40-gallons capacity.

New York, Pennsylvania, West Virginia, Ohio, Kentucky and Indiana.

RUNS.

		Day, barrels.	Sept., barrels.
Thursday, Sept.	21	68,977	1,669,925
Fri.-Sat.,	" 22 & 23	108,786	1,778,711
Sunday,	" 24	144,601	1,923,312
Monday,	" 25	64,361	1,987,673
Tuesday,	" 26	140,437	2,128,110
Wednesday,	" 27	116,144	2,244,254

DELIVERIES.

		Day, barrels.	Sept., barrels.
Friday, Sept.,	22	41,456	1,101,681
Sat.-Sun.,	" 23 & 24	76,673	1,178,354
Monday,	" 25	82,669	1,161,023
Tuesday,	" 26	36,320	1,197,343
Wednesday,	" 27	72,462	1,269,805
Thursday,	" 28	48,255	1,318,060

(Other statistics of the Pennsylvania, Ohio, Kentucky, Illinois, midcontinent, Texas, Louisiana and California fields will be found in connection with our field correspondents' reports published elsewhere. The index to contents on page 31 should be consulted for the exact location of these reports.)

Gulf Coast.

Houston, Texas, Sept. 27, 1916.

Good wells are expected soon in several Gulf Coast fields. There were no wells completed with large production, the one at Edgerly, of 3,000 barrels, being the largest reported. The daily production of the Gulf Coast division for this week is estimated at 61,305 barrels. Humble leads off with 24,000 barrels, Sour Lake, 12,000; Goose Creek is producing 10,065 barrels; Batson, 2,500; Saratoga, 2,100; Spindletop, 990; Jennings, 1,750; Edgerly, 4,500; Vinton, 2,800, and Markham, 675 barrels of oil.

The eccentric gusher of the American Production Company, at Goose Creek, reported sanded up at last writing, was opened up early last week, and started off at its usual gate of 10,000 barrels a day, and sanded up again. At last accounts it was not doing anything.

Several wells were completed at Humble; the Producers' Oil Company, on Stevenson fee, No. 29, is making 1,000 barrels of oil on air. The other wells are small. The Great International Oil Company's well, No. 2 Weed, came in a gas well.

R. E. Burt, a prominent oil man of Houston, has returned from New York and other Eastern points, where he has perfected the organization of the Atlantic and Gulf Petroleum Company, capitalized at $1,500,000. The company will begin at once active development of oil operations in Humble on what has been known as the holdings of Burt & Griffith, which have been taken over by the new company. The Atlantic and Gulf Petroleum Company is composed of R. E. Burt, president; P. S. Griffith and C. J. Straium, vice-presidents; W. R. Alexander, treasurer, and Walter Murphy, secretary. Walter Waine completes the list of directors.

While there are no completions this week in the Goose Creek field, several wells are at a depth that may bring results any day, and the interest in this field continues unabated.

The American Production Company is deepening an old hole on the John Galliard No. 1 and is down 2,000 feet with a good showing of oil. It is holding the attention of oil men who are daily expecting the well to be completed.

The Gulf Production Company No. 1 Busch, located 110 feet south of the big well, is drilling at 1,600 feet. The Hoffman Deep Well Oil Company No. 4 John Galliard is down 1,875 feet, and the same company has a well, No. 2, on the Ashbel Smith twenty-five acres, drilling at a depth of 1,275 feet.

C. T. Rucker has a well down 1,520 feet, and new derricks are going up in all parts of the field.

Goose Creek is to have a new jail and a court house. There is to be a good shell road constructed through the oil field. The county commissioner is looking into the advisability of installing a ferry across the bay from Morgan's Point to Goose Creek.

E. F. Simms paid $200,000 for West & Newman's holdings, consisting of twenty-nine acres out of the Minnie Galliard, and twenty acres out of the Sweet land on which there are six wells with a daily production of 325 barrels of oil. The leases are within a few hundred feet of the big well. A number of deep tests will be drilled. Terms of sale, $100,000 cash and $100,000 payable from the first oil sold from the lease. Mr. Simms has also made location for four wells on 1,400 acres out of Ashbel Smith tract.

The Ashbel Smith land is under litigation. On Tuesday a suit was filed against the Gulf Production Company and eighteen other defendants in the name of Grace Adey, one of the heirs, to recover half interest in 1,800 acres of land contiguous to the Goose Creek oil field. The property is known as the Ashbel Smith plantation. In 1854 Ashbel Smith made a deed to his brother, Henry G. Smith, a lawyer of Memphis, Tenn. Some time between 1854 and 1860 Henry G. Smith died. After the death of Ashbel Smith his heirs sold the land to the defendants. Now the heirs of Henry G. Smith, in the name of Grace Adey, one of the heirs, comes with suit to recover half interest given by Ashbel Smith to Henry G. Smith.

Wells Drilling in Goose Creek.

The following is a complete and authenic list of wells now drilling at Goose Creek:—

Gulf Production Company, 2 Hoffman-Galliard, drilling at 100 feet.

Gulf Production Company, 2 K. Mitchell; rigging up.

Gulf Production Company, 1-A Wright; rigging up.

Gulf Production Company, 4 Briggs; rigging up.

Gulf Production Company, 3 Stateland Oil Company; rigging up.

Empire Gas and Fuel Company, 1 Adey; rigging up.

Great Southern Petroleum Company, 1 John Galliard; set 10 inches at 400 feet to drill a deep test.

Hoffman Goose Creek Oil Company, 1 De Merritt; starting.

Virginia Oil Company (D. R. Beatty et al.), No. 1 on six and one-quarter acres of Adey tract.

Hoffman Deep Well Oil Company, 4 John Galliard; down 1,875 feet.

Hoffman Deep Well Oil Company, 2 Ashbel Smith twenty-five acres; 1,275 feet.

American Production Company, 2 John Galliard; temporarily abandoned at 1,645 feet.

American Production Company, 1 John Galliard; old hole being deepened with good showing at 2,000 feet.

C. T. Rucker, John Galliard; down 815 feet.

E. F. Simms et al. (formerly George Newman, trustee), 3 Sweet twenty acres; down 845 feet.

E. F. Simms et al., 1 Minnie Galliard twenty-nine acres; 300 feet.

C. T. Rucker, 1 Gillette; down 1,520 feet.

American Production Company, 1 Jones twenty-five acres; 300 feet.

Goose Creek Petroleum Company, 1 Minnie Galliard two and one-half acres; down 600 feet.

Harry Meyers et al., 1 Wright two and one-half acres; down 1,900 feet.

Producers' Oil Company, 1 Isenhour 30 acres; rigging up.

Hufstutler Oil Company (R. L. Young et al.), I Duke; rigging up.

E. F. Simms et al., four wells being located on 1,400 acres Ashbel Smith tract.

Drilling operations in the different fields average about the same as that of the preceding week.

From the Vinton Field.

Vinton, after showing no completions for weeks past, leads off this week with a flowing well with an initial production of 3,000 barrels oil, no water. This well, the Vinton Petroleum Company's No. 1 Harmony, an old hole, was completed at a depth of 2,615 feet. It is now making only 150 barrels; 2 per cent water.

There are a number of wells drilling at a greater depth and near completion; Gardner & Noble's No. 1 fee set two joints of strainer at 2,735 feet and is now bailing with a showing of oil.

Gyp Petroleum Company's No. 2 Oliver is reaming out to set strainer at 2,610 feet.

The Gum Cove Company No. 3 Stewart acre is drilling at 2,410 feet, and Wilson & Tucker's No. 3 is drilling at a depth of 2,590 feet.

At Sour Lake Hudson & White's No. 1 Hardin is flowing 150 barrels of 15 gravity oil at a depth of 3,100 feet. This well is in the northwestern part of the field. 600 feet from production, on a ten-acre tract.

The Lake Oil Company's S-C Jackson has been deepened to 2,200 feet, and is pumping 50 barrels. They have set screen in No. 10 at 2,750 feet and putting it on the jack. It is rigging up preparatory to drilling No. 11. The same company is also rigging up 10-C Jackson Bashara No. 14.

The Lake Graham Company's No. 12 Bashara has set screen at 2,400 and is bailing. Humble Oil Company's No. 4 Faehrman set screen at 2,900 feet, found salt water and will drill deeper. Humble Oil Company's No. 1 Hardin set screen at 1,900 feet, and has a showing of oil.

Other deep tests at Sour Lake are:—Merrimac-Martin No. 3, drilling in rock at 2,850 feet. Sour Lake Development Company's No. 1 Merchant, drilling 2,500 feet. Sour Lake Development Company No. 4, at 2,300 feet and De la Houssaye No. 2 at 2,600 feet.

At Edgerly one well was completed with production of 150 barrels of oil. The Miller Company (Read ten acres) No. 1 has set strainer at 3,500 feet, has salt water and is now shut down. Miller No. 2 is sanded up.

The Victory Company has two deep tests drilling, one down 2,910 feet and the other 1,985 feet. The Travelers' Oil Company's No. 3 Muller is drilling at 1,975 feet. While no completions were reported from Markham, deep drilling is still holding the interest of operators interested in that field. The Buena Fe Company (Doheny interests) is drilling its third deep test and is now down below 1,500 feet. The present test is located on the I. S. Smith land and is 250 feet northwest from the first test. The first and second tests were drilled on the Hudson tract—one to a depth of 3,100 and the other 2,900 feet. This company has over 20,000 acres leased in the vicinity of Markham. An effort is also being made to unite the interests of a number of producers with holdings at Markham in drilling a deep test to the north of present production, the Buena Fe hole being put down southeast of the oil field.

The Clem Oil Company's No. 2 Meyers, which came in June 10 flowing 5,000 barrels, has been put on the beam and is now making 200 barrels a day. The oil is 36-degree temperature and is free from water. The status of other operations at Markham is as follows:—

Powattan Oil Company No. 1 Smith; waiting to drill in at 1,480 feet.

Clem Oil Company cleaning out No. 9 Hardy.

Producers' Oil Company is working over No. 2 Hardy and has made a location for a new well on the Meyers lease, 300 feet southwest from the Clem Company's No. 9 Hardy.

The Record in Batson.

At Batson three small wells were completed. The Sun Company's No. 57 Millholme that was flowing last week is now on the jack at an estimate of 150 barrels fluid, of which 50 per cent is oil. The Magdelena Oil Company's No. 1 Yopas started to set 6 inch casing and stuck 200 feet from bottom. They are 2,830 feet down in gumbo. Ada Bell Oil Company's No. 35 Honeymoon is rigging up. This test is located 120 feet east of No. 33 Honeymoon, which was completed last week. These Ada Bell wells are all of shallow depth; almost every week recently one or more have been completed with a small production.

Two small wells were completed at Saratoga with total production of 30 barrels. But one rig is now running.

At Spindletop one well of 20 barrels production was completed. The Wilson Broach No. 8 Higgins, side tracked the old strainer and set a new one and are now bailing. The Unity Oil Company No. 66 McFadden is drilling in gumbo at 150 feet. It is located 40 feet west of No. 15.

It is noticeable that there were no wells abandoned in the proven fields during the week.

No wells were completed at Jennings during the week. Gulf Refining Company's S. F. S. No. 37 came in flowing and sanded up. They are trying to pull the strainer.

Crowley Oil and Mineral Company's No. 71 deepened to 2,130 feet, set 3-inch strainer and bailed salt water. They are setting packer to cut off the lower stratum.

Zeigler et al., No. 4 Chicago-Jennings, are down 1,995 feet, with a showing of oil.

Following are the new oil companies granted charters during the week ending September 23, 1916, at Austin, Texas:—

American Guarantee Oil Company of Houston; capital stock, $100,000. Incorporators:—J. M. Singleton, J. O. Ehlinger and M. Kolls, all of Houston.

J. M. Ramsey Oil and Gas Company of Waco: capital stock, $30,000. Incorporators:—F. M. Ramsey, H. W. Key and W. B. Abney.

Prudential Oil and Development Company of Galveston; capital stock, $50,000. Incorporators:—S. D. Earinger, B. Cowell and J. A. Hawkins.

Eagle Production Company of Houston; capital stock, $150,000. Incorporators:—J. L. Breathwit, M. Lerew and M. F. Allison.

Union Production Company of Houston; capital stock, $100,000. Incorporators:—J. L. Breathwit, M. Lerew and M. F. Allison, all of Houston.

Permit to do business in Texas was granted the C. T. C. Corporation of Portland, Me.; capital stock, $15,000. Purpose, oil development. The Texas headquarters are at Beaumont, with Walter J. Crawford as agent.

Certificate of dissolution filed:—Texas Gas and Petroleum Company of Corpus Christi.

Completions in All Districts.

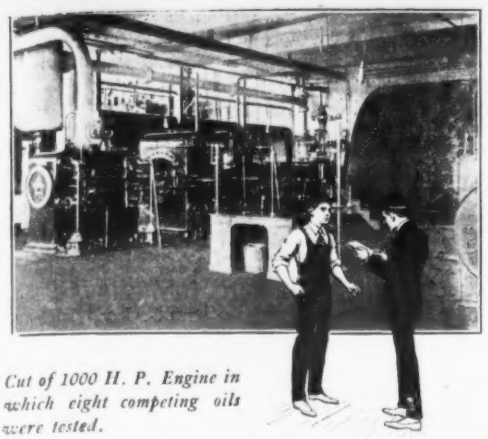
Following is a list of completions in all districts of the Gulf Coast division in the week ending September 23, 1916:—

WILDCATS.

W. S. Farish, trustee, I. Mooney, at West Columbia; abandoned at 3,600 feet.

Gulf Production Company and Humble Oil

Lubricating Expense Reduced



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Company, joint deep test at Davis Hill in Liberty county; abandoned at 2,200 feet.

SOUR LAKE.

Hudson & White, Hardin Oil Company; flowing 150 barrels.

Lake Oil Company, 8-C Jackson; pumping 50 barrels.

BATSON.

Paraffine Oil Company 2 on fifteen acres; on jack pumping 70 barrels.

Ada Bell Oil Company 34 Honeymoon; pumping on jack 20 barrels.

W. C. Turnbow 9 Hance Woffard; pumping 20 barrels.

HUMBLE.

Gulf Coast Oil Corporation, 4 fee; pumping 75 barrels.

Gulf Coast Oil Corporation 15 Hermann; pumping 100 barrels.

Producers' Company 29 Stevenson fee; making 1,000 barrels on air.

Republic Production Company 4 Stevenson; worked over, pumping 200 barrels.

Republic Production Company 38 Stevenson; pumping 400 barrels.

Great International Oil Company 2 Weed; gas well.

SPINDLETOP.

Sun Company 13 Star & Crescent; pumping 20 barrels.

VINTON.

Vinton Petroleum Company 1 Harmony; flowing 3,000 barrels oil, no water.

SARATOGA.

Rio Bravo Oil Company, 351 fee; pumping 20 barrels.

Paggi Brothers 54 McShane Lumber Company; pumping 10 barrels.

Drilling Summary.

The following table is a summary of drilling operations for all districts in the Gulf Coast division for the week ending September 23:—

Districts.	Comp.	Prod.	Dry.	Rigs.	Drg.	Tot.
Edgerly	1	150	..	4	4	8
Jennings	..	....	..	1	4	5
Vinton	1	3,000	..	2	9	11
Batson	3	110	..	2	7	9
Goose Creek	..	....	..	11	16	27
Humble	6	1,775	..	10	14	24
Saratoga	2	50	..	..	1	1
Sour Lake	2	200	..	10	25	35
Markham	..	....	..	2	4	6
Spindletop	1	20	..	..	2	2
Wildcats	2	....	2	18	22	40
Total for wk.	18	5,285	2	60	108	168
Totals pre. wk.	12	1,177	1	83	105	188
Difference	4	4,108	1	23	3	20

Texas Panhandle.

Fort Worth, Texas, Sept. 26, 1916.

The proven fields of the Texas Panhandle are furnishing few news items at the present time and until plenty of rain has fallen in the North Texas district it is probable that there will be little to report; although, notwithstanding the drouth, some little work is being done in the defined area and a great deal of wildcatting throughout the district.

In several counties of this territory there have been interesting developments recently and many operators are flocking in to look over the ground, with an eye to development.

The Little Strawn pool, generally considered a wildcat development, has produced three paying wells during the past week. One is a good-sized gasser and the two others producing oil wells, with a capacity over 75 barrels each. The gas well was only 520 feet in depth and the others were completed in the 950-foot sand. All three are the property of the Texas and Pacific Coal Company. The acreage where they are drilled is an extension of the field to the northeast, and, though water has been found in other parts of the field in connection with the oil in these wells, the sand, which is about 25 feet in thickness, contains no water whatever. Other wells are being drilled surrounding the new producers and several new locations have been made, with the idea of defining the field. Most of the acreage of the surrounding territory is held by the Texas and Pacific Coal Company, but nevertheless great interest has been aroused, as so many of the operators are wildcatting in this county to the north and northeast. These structures and formations, by the various wells drilled throughout the county, show it to be underlaid throughout by the Pennsylvania formation, and various oil county geologists have pronounced it as likely territory for the production of both oil and gas. This theory has been upheld by the United States Geological Survey and various reports have been issued by the bureau showing the belief of the government experts that pay sand would be found if the country was prospected properly.

The Strawn field, producing both oil and gas, and the recent opening up of a gas field in central and eastern Palo Pinto county, gives strength to this theory and many wildcat wells are being drilling and others are in prospect. The Empire Fuel and Gas Company, who are the principal owners of the gas acreage, are now drilling two deep tests in the search for oil. Owen, et al, who recently got a good gasser south of Mineral Wells, are to drill another test near the initial well on other acreage that has been secured.

The Texas and Pacific Coal Company have secured acreage both to the south and northwest of Mineral Wells and have already spudded in on the Corn ranch, which was formerly known as the old Jordan place, and about five miles west of Mineral Wells A. P. McBride, of Independence, Kans., has erected a rig on the big Belding ranch and is about ready to start his first hole in that locality. Mr. McBride has other tracts of land to the north of Palo Pinto and is putting up machinery to drill on the Holt ranch and on the Hawsell ranch. He is also drilling two wells in Duvall county, Texas, where the prospects seem to be good. The well being drilled by the Weatherford Development Company east of Mineral Wells has reached a depth of 2,200 feet, and the contract calls for a 3,000-foot test, providing nothing is encountered sooner.

The new well brought in near Brownwood in Coleman county did not prove to be quite as good as originally estimated, but it is producing about 50 barrels of oil daily and also has a heavy flow of gas. This production, together with the discovery well, which was drilled one and one-half miles to the northwest, and the fact that a small pool exists further to the south near Trickman, seems to prove that pay underlies a good part of this county and a scramble for acreage has already resulted from the developments existing. The present well was completed at 1,425 feet, with 25 feet of pay, but a 40-foot sand containing oil was drilled through between the depths of 1,047 and 1,087 feet, but as the sand also contained some water it was determined to drill deeper. This sand, however, is likely to prove a good producer somewhere in the neighborhood and many other tests are already planned on surrounding acreage.

In Archer county the well on the Luke Wilson ranch has finally been put on the pump. At first more water than oil was produced and it was feared that the well would not be a paying one. Pumping was continued, however, and the oil production increased considerably, while the amount of water was lessened, and the last reports from the well show a daily production of 40 barrels of oil, with very little water. About one mile to the northeast the Developers' Oil Company is drilling, and at 550 feet a 15-foot sand was struck. Drilling through this they got a showing of oil at 700 feet, but will probably drill to the 1,750-foot sand. The Gulf Production Company has a derrick built about two miles northwest of the Wilson well and a number of other locations have been made. Further northwest a new location has been made for a deep test recommended by a geological expert, who has just made a survey of that vicinity. This is not far from the test known as the Grant well, in which an oil sand was struck containing oil in paying quantities, but which was spoiled by drilling into salt water.

Shackelford county appears to be also attracting attention from the wildcatter again. The vicinity of Moran in that county has shown many good wells, but they do not appear to be long lived. The two big companies of the Panhandle, the Producers' Oil Company and the Magnolia Petroleum Company own most of the acreage in this vicinity, and for some time past no work has been done there, owing to the short period during which the wells produced and the egreat expense of drilling, as the sand lies deep and the drilling is hard through the red rock and sand formation. Now, however, it is stated that the Big Bend Oil Company is drilling a test southeast of Moran, and that Baird people have secured a tract of 20,000 acres near the town of Moran, and that a company has been organized capitalized at $60,000 to drill some tests. Jack county shows one new location northeast of the town of Jacksboro, and the well drilled by M. A. Low & Son, which has been shut down for some time, is to be drilled deeper to 3,000 feet.

The sulphur bead recently discovered near Toyah, in Culbertson county, appears to be a paying proposition and machinery is now being set up at the mines to mine and refine the product. At present about ten tons are being taken out daily, but it is expected that as soon as the machinery is installed the output will be about 50 tons per day. Owing to the great war the demand for sulphur is very great and there will be a fine market for the product. The mine is owned mostly by Dallas, Texas, people.

In the Electra field during the past week there were only three completions to report. The Producers' Oil Company got a 25-barrel well at 1,635 feet on the Tate Waggoner ranch, and the Magnolia Petroleum Company have a 100-barrel producer at 1,970 feet on the Piper ranch. The same company has abandoned No. 51, R. R. Allen, as dry at 1,830 feet. In the Burkburnett pool Walker et al. got two 30-barrel pumpers on the Powell farm at 560 feet, and the Magnolia Petroleum Company has a 15-barrel starter at 610 feet on the Hugh Kelly farm. The Fardee Oil Company completed No. 1 P. Ramming at 1,000 feet, good for 10 barrels per day.

Summary of week's work in the Texas Panhandle follows:—

	Comp.	Prod.	Dry.	Gas.
Electra	3	125	1	..
Burkburnett	4	45	..	..
Strawn	3	100	..	1
Coleman county	1	50	..	..
Total	11	320	1	1

New Refineries Planned by Texas Companies.

Austin, Texas, Sept. 28, 1916.

Several of the larger oil companies of Texas plan to enlarge their refineries and to build new plants. There are at this time twenty-three oil refineries in this State. They represent a total investment of $47,350,000, and they have an estimated total daily capacity of 179,800 barrels of crude oil. The companies that own refineries are as follows:—Magnolia Petroleum Company with refineries at Beaumont, Corsicana and Fort Worth; United Oil and Refining Company with a refinery at Beaumont; Central Refining Company with a refinery at Corsicana; The Texas Company with refineries at Dallas, Port Arthur and Neches; Gulf Refining Company with refineries at Fort Worth and Port Arthur; Producers' Refining Company with a refinery at Gainesville; Houston Oil Company with a refinery at Houston Heights; Wichita Valley Refining Company with a refinery at Iowa Park; Avis Wood Refining Company with a refinery at Jacksboro; Petroleum Refining Company with a refinery at Houston; Pierce-Fordyce Oil Association with refineries at Texas City and Fort Worth; Pure Oil Refining Company with a refinery at Houston; Orange Refining Company with a refinery at Orange; Oriental Oil Company with a refinery at Oriental, near Dallas; Dixie Oil and Refining Company with a refinery at San Antonio; Thrall Refining Company with a refinery at Thrall; Panhandle Refining Company with a refinery at Wichita Falls.

The largest refinery in Texas is that of the Gulf Refining Company at Port Arthur, which has a daily capacity of 60,000 barrels. It is of the same capacity as the refinery of the Standard Oil Company of Indiana, at Whiting, Ind. These two plants are the largest in the world, it is stated.

Wyoming.

Caspar, Wyo., Sept. 29, 1916.

There is no doubt in the minds of those familiar with the petroleum industry that Wyoming is going to be a large producer of the crude product. The oil may be found in pools and not continuous, like some of the other noted oil fields. Development of Wyoming's apparently limitless oil resources is progressing so rapidly and in so many localities that it virtually is impossible to keep tab of the State's growing number of producing wells and their output, therefore nothing can be said for a certainty about the production. Five years ago there were a few score oil wells in the State, a majority of them but shallow holes of little value. Today the number of wells that possess gas and show oil and gas run well into the thousands, the State's oil production during the current year at the present average of the eight months past will exceed 7,000,000 barrels and the production possible from the wells now drilled, if there were refinery facilities to handle all the product, is so enormous that it is conjectural. Among the fields in which drilling now is in progress, and in some of which hundreds of wells have been put down, are the Little Horse Creek, Lusk, Bronning Basin, Big Muddy, Salt Creek, Lost Soldier, Big Piney, Pilot Butte, Sage Creek, Grass Creek, Basin, Torchlight, Greybull, Powder River, Shannon, Cody, Elks Basin, Little Buffalo Basin, Sundance, Lost Cabin, Ervay, Sheridan, Wheatland, Alkali Butte, Bonanza, Meeteetse, Byron, Lovell, Powell, Cowley, Moorcroft, Belle Fourche, Newcastle, Boxelder, Dallas, Piunkett, Teapot, LaBonta, Wagon Hound, Laramie, Evanston, Goshen Hole, Thermopolis and numerous others.

Famous Powder River Dome.

Wyoming has come to the front with another promising oil field on Powder River and not very remote from the Salt Creek field which has produced millions of barrels of the finest crude petroleum in the country. In this district, where work is now being prosecuted, all the physical and geological signs indicate the presence of oil in vast quantities. Already there have been many discoveries, and while

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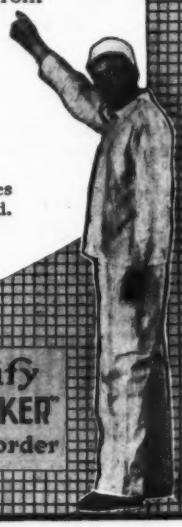

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there has been no boom as yet the activities of oil scouts indicate that a thorough test of the Powder River district will be given. The field is about fifty-five or more miles from Casper and about fifteen miles from the Salt Creek and Shannon fields in a northwesterly direction. This field was known as early as the '80s, though up to date it has not been of any commercial value.

The principal stream of the region is the South Fork of Powder River, which flows northward along the west side of the dome and turning to the northeast cuts across the country until it joins the Powder River in the east. The best drinking water in the vicinity of the dome occurs in the Wall Creek sandstone lentil, which forms the escapement. There are several good springs which flow from this and in the dome.

ThePowder River dome is a somewhat irregular oval structure sixteen miles in length from north to south and ten miles from east to west. About fifteen miles north and a little west of the highest point there is a smaller dome, which lies just west of the village of Kaysee. The two domes are connected by a low anti-clinal arch and may be considered as parts of a single structure—an anticline thirty miles in length and fifteen in width. The whole structure is a duplication of the anticline of Salt Creek, except that in the Salt Creek anticline the northern dome is larger. In the Salt Creek dome only rocks of the Montana group are brought to the surface, where in the Powder River dome older formations are exposed; in other respects, the two anticlines are very similar.

The oil of the Powder River field is a heavy lubricating oil, somewhat higher in specific gravity than the heaviest oil at Salt Creek. It is a black color and can be used for fuel oil in the crude state or for the manufacture of lubricants. Oil has been found in five different beds in the Powder River field. Prospects of obtaining oil from the Dakota sand are very favorable, though it is the opinion of some experts that the Embar sand will yield the best, and both are within the reach of the drill in the dome. Drilling alone will affirm these opinions.

The presence of oils in two sands, as well as in the Dakota sand, would seem to indicate a common origin for the oil. It does not seem unreasonable to suppose that it is working its way upward from some source as yet undiscovered, and that it collects in any sandstone which forms a convenient reservoir. The Embar formation bears oil in the Lander fields and they appear to be worth testing in the Powder River dome. As in the Salt Creek field the wells are self flowing. On account of the distance, Powder River dome has not felt the mad rush of the oil drillers, investigators and speculators, but the oil men of the country are beginning to realize the value of the vast field lying dormant, awaiting the touch of the human hand, the brains and capital to make it one of the most productive fields in the country. The oil is there and as high as fifty barrels of oil can be taken out of any assessment hole any day. The land is being rapidly taken up and released to large concerns who are making preparations to start drilling soon. Some three years or so ago the Ohio Oil Company made its first drilling venture in Wyoming in the Powder River country and found a dry hole at a great depth, but the well did not condemn other property than just around the hole drilled, which cost a snug fortune to drill. It has been reported that this hole alone cost close to $40,000. The heavy expense was the moving of the material from the Casper warehouses of the oil well supply companies, as the hauling of pipe amounted to a price above a dollar per hundred pounds, and a lot of pipe is used in the testing of that territory, which in reality is a field that the smaller capitalists can hardly afford to take a chance in. The larger companies have plenty of capital and usually set aside a large amount to do just this style of development work, and it works no hardships upon them, where a man of smaller means would go broke on one test. Like drilling in California, it is very costly.

With the consequent increase in demands chances for the development of new petroleum fields are ever presenting themselves, and today, with the opening of the Powder River does will prove to the oil world that another field has laid claims to their attention. Ohio, Pennsylvania, West Virginia, Oklahoma, Indiana, Texas, Illinois and Kansas, as well as Louisiana, have all had their day, then Salt Creek came, and with the awakening of Wyoming, this State will prove its ability to rank with the foremost, and the Powder River oil field looms up as one of its brightest stars.

Activity in Leasing Lands.

Although the lands on the ceded part of the Wind River Reservation in Fremont county have been thrown open for leasing, the Department of the Interior has not as yet formulated the regulations under which the lands will be let. Just as soon as the President signed the act and it became a law there was a rush from all over the county to file applications for the Reservation lands which include the Pilot Butte and Maverick Springs fields, and several other likely localities. Filings were made in both the general land office and the Indian office at Washington, D. C., and at the land office at Lander and the Indian office at Fort Washakie. As many as seven applications for the same land are on file in the different places. Advices from Washington indicate that the leasing will be handled by the Reservation authorities and that the Indian Deparment officials will rule on priorities. Just as soon as these leases are granted there will be a lot of drilling done on the ceded part of the Reservation. Several companies are holding rigs now to put on the leased land when the title is cleared. On Sage Creek the Ohio Oil Company is going right ahead with a hole that is down close to 1,000 feet and a flow of black oil has been drilled into, but this was eased off and the hole will be put down to a deeper pay sand, expectations being that a much more prolific pay sand will be encountered at a depth close to 1,500 feet.

Landerites Are Hustling.

The people at Lander and in the surrounding section are now hustling, as they are anxious to see Lander the beautiful spot, one of the leading oil metropolises of Wyoming, as they feel as though the section abounding in Fremont county is rich in petroleum and its products. Lander has time and again had hopes of becoming a prominent oil town. There are a number of producing domes within a few miles and in all there is a production of about 500 barrels a day, which is shipped by tank cars to the Midwest plant at Casper. This does not include the recent developed field on

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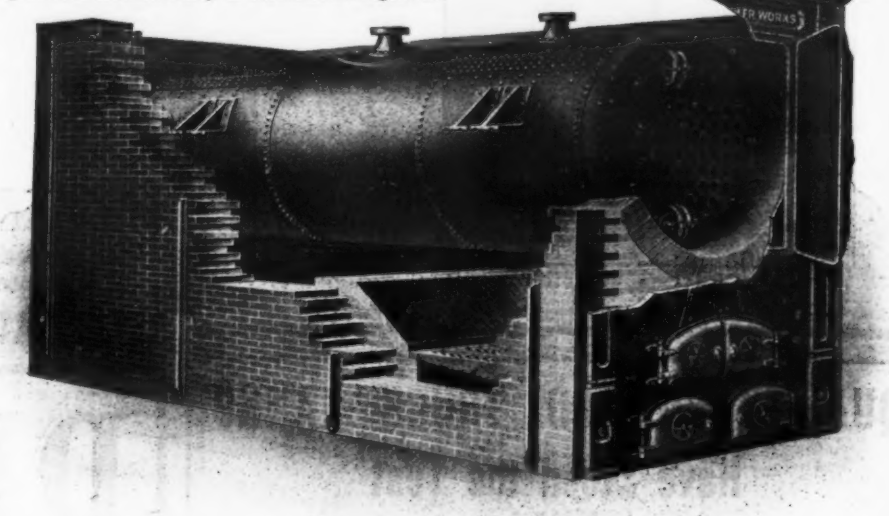
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the Pilot Butte dome, nor the Sage Creek development.

The principal production of the Lander district comes from the Hudson field located four miles northeast of Lander. Ten wells have been completed on this dome. This is a black oil with asphalt base and the dome is controlled by the one producing company. In the Dallas, nine miles southeast of Lander, there are twenty producing wells. This property was developed by English capital and is reported to be in litigation. Nine miles north of Lander on the Indian Reservation four small wells of a high-grade petroleum have been finished and are shut in for want of a market and transportation.

Other tests have been made in the district, but the Hudson and Dallas domes are the only ones from which production is now being shipped. Short pipe lines carry the oil from the wells to loading racks along the Chicago and Northwestern Railroad. Several test wells are projected in the Lander section and the town may yet be a real oil boom city.

Big Oil Land Case.

Before the United States Court of Appeals at Denver there was just heard a case of far-reaching importance to the government, to filers of oil lands and investors in oil securities. When it is decided it will directly affect lands worth $1,000,000 in Wyoming and be a precedent for the courts in the Southern Pacific oil lands litigation, involving a sum estimated at $500,000,000. The Grass Creek Oil Company and the Ohio Oil Company are the defendants. The ground in question is located in the rich Grass Creek field in Hot Springs county, Wyoming, 240 acres being in litigation. The government seeks to regain title to the land, enforce a receivership application and recover for the oil already taken out. F. P. Hapgood, of San Francisco, special assistant to the Attorney General of the United States, presented the case for the government.

It will be remembered the Court of Appeals of the Eighth Circuit is called on in the case presented, through an appeal by the government from a decision of Federal Judge John R. Riner, to decide for the first time the exact status of oil land developers under the terms of what is known as the Pickett act of Congress. The act provides that even though there has been no discovery of oil, if at the date of the withdrawal of the lands by the government, which, in this case was May 6, 1914, one is a bona fide claimant or occupant of the land, and engaged in diligent prosecution of work leading to discovery his rights are not impaired, so long as he continues in that diligent work of discovery.

Prosecutor Hapgood asserts the evidence shows that neither of the defendant companies were in actual possession of the land on the date of withdrawal. He told the court the oil companies were in a peculiar position in declaring they have diligently pursued their work of discovery, when it was shown that they were not in possession of the land on which the oil was ultimately found. He asked the court to remove the oil companies as trespassers because of their violation of the terms of the withdrawal act of May 6, 1914.

There is no question of the validity of the withdrawal act involved. The two oil companies told the court they made the discovery before the withdrawal act order went into effect. This statement President Hapgood vigorously denied. The companies assert that they drilled shallow holes in 1913 and discovered a few drops of oil. The government says the evidence shows that there were several holes bored in the field, but in none of them was oil discovered until a depth of 1,000 feet was reached in genuine oil sand. Judge Riner upheld the contentions of the companies.

The companies declare they were in diligent search of oil when the lands were withdrawn in 1914 under the terms of the Pickett act. The government says that not only were the two companies not diligently prosecuting the work of discovery and not in possession of the withdrawal date, but that the Standard Oil Company's subsidiary, the Ohio Oil Company, did not even get a lease from the alleged locators until June 16, 1914, forty days after the withdrawal order. This is the same question which has arisen in the Southern Pacific cases in California, which have not yet reached the appeals court on their merits. These cases are awaiting the results of the Wyoming litigation.

So important was the case considered by the government that the Attorney General of the United States wrote a letter to the judges of the Court of Appeals asking him to give Prosecutor Hapgood an extension of time in which to present his arguments. The court at Denver granted the request. The government attorney went from Denver to Los Angeles to take part in arguments in the big California oil case.

There are other tracts of land in Wyoming involved in the same kind of a controversy as that between the government and the Grass Creek Oil Company and the Ohio Oil Company, while hundreds of California locations are to be affected by the ruling of the court.

All Over Wyoming.

It is reported that oil has been found in a well drilling on the John Bunn ranch sixty-odd miles northeast of Cheyenne, in the Goshen Hole country, in Goshen county, by the Goshen Oil and Gas Company at a depth of 700 feet. The company holds leases on about 40,000 acres in the vicinity of the Bunn ranch, and if the well proves a paying one, they will have sufficient territory to keep them busy for years to come to develop it.

While little news comes out of the Lander Soldier field, north of Rawlins, it is stated that a great deal of activity is in progress there, not merely of the "validating" variety, but in scientific drilling. More than a dozen strings of standard drilling tools are in operation in the field and numerous wells have been brought in. The oil is of 26 gravity and has an asphaltic base.

W. D. Littlejohn, the Thermopolis oil man, and his family have gone to Long Beach, California, where they will spend the winter. The family has been living at Thermopolis since the Littlejohn Brothers sold their ranch on Grass Creek last spring to the Ohio Oil Company for $200,000.

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(Continued on page 101.)

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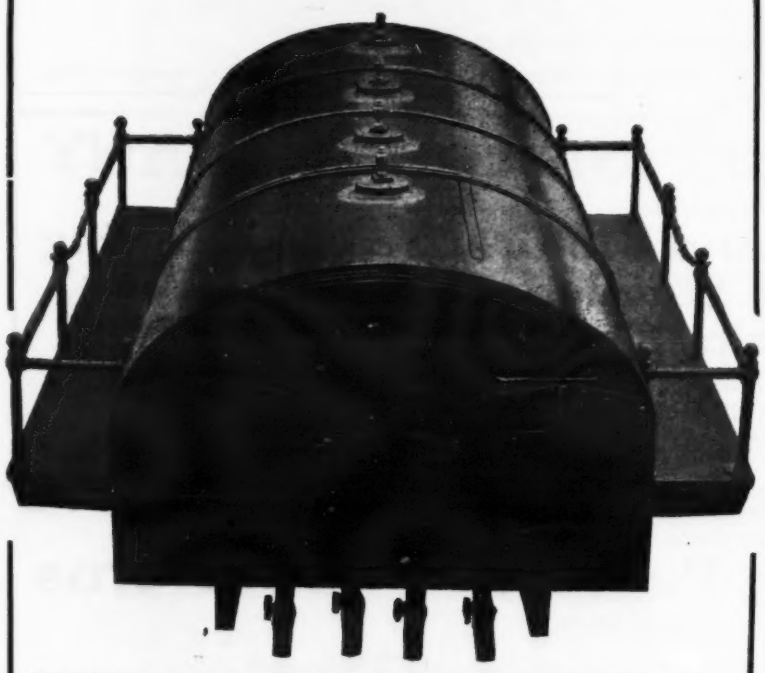

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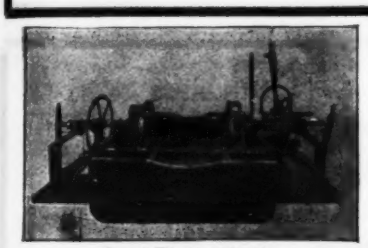

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DYESTUFFS INDUSTRY AND CHEMICAL REBIRTH OF NATION PRIME FACTORS

The American Chemical Society has won a new place for itself in the realms of scientific achievement. Its annual meeting, which began on Monday last and was brought to a conclusion with a subscription banquet on Friday evening, established a new precedent which, through the increased interest due to most unusual conditions in the chemical industry, and to the advantage which Americans chemists have taken of such conditions, will be extremely difficult for subsequent annual meetings of the Society to eclipse.

An Amazing Gathering of Representative Men.

Never in the history of the American chemical industry has there been gathered together—under one roof—for the Grand Central Palace, as large as it is, could not accommodate all the sessions of the various sub-divisions of the Society—such a number of men prominent in every branch of the chemical and allied fields of endeavor. From the government departments, from the laboratories of the great chemical and industrial plants which have won a distinctive place during the past decade, from the professorial chair and the college and techincal school classroom, came the best the country can show in chemistry and allied endeavor.

A Triple-Headed Convention.

The gathering was a triumvirate. Not alone was the American Chemical Society the host and the principal feature of convention week, but with it, in individual and in collated sessions, were the men of the American Electrochemical Society and the Technical Association of the Paper and Pulp Industry, and the weight of their combined presentation of the great truths of modern chemical science was bewildering to the layman, and unusually provocative of thought and of personal initiative on the part of the chemical fellows of the several organizations.

There were sessions at the Chemists' Club, at Columbia University, at the Grand Central Palace, and at the New York College of Pharmacy, and, not the least important, there was a continuous illustration of the creations of American industrial chemistry at the exposition which filled the main floor and mezzanine of the Grand Central Palace with one of the best balanced exhibitions of modern apparatus, modern machinery and modern methods ever brought together in one building.

A Complete Report Impossible.

To adequately present a report of the sessions and of the various exhibits of the exposition would require an edition of the Reporter thrice the size of the present issue, which is many pages beyond normal.

Think of the subjects treated upon and illustrated:—Dyestuffs manufacture with the results of American attempts to meet foreign competition along lines so long held by overseas nations that it was thought they enjoyed a permanent monopoly; the production of the coal-tar and coke oven by-products, toluol, benzol, trinitrotoluol and other bases not only for war munitions but for dyestuffs; industrial alcohol; new processes of producing paper and wood pulp; American glass and porcelain manufacture—and this is but one side of the shield, for the chemical papers pesented at the several sessions embraced every side of the chemical industry of the day, under the following divisions, each with its own chairman and its own program:—

The Varied Divisional Meetings.

Biological Chemistry.—C. L. Alsberg, chairman.

Agricultural and Food Chemistry.—L. M. Tolman, chairman.

Industrial Chemists and Chemical Engineers.—H. E. Howe, chairman.

Pharmaceutical Chemistry.—John H. Long, Chairman.

Organic Division.—C. G. Derick, chairman.

Rubber Section.—L. E. Weber, chairman.

Physical and Inorganic Chemistry.—Irving Langmuir, chairman.

Water, Sewage and Sanitation.—Edward Bartow, chairman.

Fertilizer Chemistry.—J. E. Breckenridge, chairman.

In addition to this program of the American Chemical Society the American Electrochemical Society held its sessions on Wednesday, Thursday, Friday and Saturday, with joint conferences and joint participation in banquet, "smoker" and inspection of the exposition with its reproduction in moving picture and in machinery and apparatus of the processes relating to the subjects discussed.

Nearly half a hundred industries were represented in this exposition, with more than a score of dyestuffs exhibits, thirty paper and pulp exhibits and nearly one hundred exhibits of machinery of a technical nature. In all, nearly thirty States of the Union were represented by exhibits

FIRST DAY.

Nearly 2,000 Delegates Registered at the Chemists' Club Before Day's End.

During the opening hours of the first day of "Chemists' Week," the general headquarters of the convention at the Chemists' Club, 41 East Forty-first street, were crowded with members of the Society, and at the close of the first day's registration a total of nearly 2,000 delegates had been enrolled. From almost every State in the Union and from abroad the roster indicated the arrivals had come, and among the names were many among the first rank of American chemistry.

The First Formal Meeting.

Soon after 2 p. m., in the audience room on the mezzanine floor of the Grand Central Palace, the first formal session of the week took place, the occasion being the opening of the Second Exposition of Chemical Industries, so inseparably connected with the several sessions of the three societies as to be an essential part of the program.

Secretary Charles F. Rother, of the New York Section of the American Chemical Society, and a member of the Exposition Committee, acted as chairman, and called the meeting to order after President Charles Holmes Herty of the Society had received the keys of the convention hall from General Manager Payne and the doors had been thrown open to the public. While the exhibits were not all in place nor complete, the ratio of completion was much nearer 100 per cent. than any other exhibition held recently in this city.

Dr. Herty faced the waiting hundreds before the doors and announced:— "The Second National Exposition of Chemical Industries is now open—we greet you all," and the wheels began to turn on the inside of the great building.

In his formal address after the audience had gathered in the mezzanine auditorium—where the moving pictures were shown daily when meetings were not scheduled—President Herty said:—

It is an inspiring occasion that brings us together here today. In this building are gathered the evidences of the resourcefulness, ingenuity and courage of American chemists and chemical engineers. The exhibits, more than doubling in number those in the initial exposition last year, furnish ample proof that the unusual call upon the chemists during recent months has been worthily met, and it is an especial pleasure to express to the managers of the exposition our indebtedness for the splendid handling of this increasingly important event.

In addition to the important advances here evidenced in the manufacture of dyestuffs, glass, porcelain and machinery of all sorts for chemical plants there is a distinct new feature furnished by the inclusion of exhibits of natural resources suited to the development of chemical industries.

I feel that our modest beginning along this line presages a far wider development in the future, and that this exposition will assume naturally, though gradually, its true function, namely, an assemblage of the products of chemical industry and a meeting place for the consultation and discussion of manufacturing difficulties, and as an assemblage point for the exhibition of the great natural resources of this country, exhibited from the standpoint of their availability for the development of chemical industries. With this new and widened vision, untold possibilities of great national service present themselves.

The deep and intelligent public interest in the exposition furnishes abundant proof that the people of our country are steadily gaining a clearer idea of the fundamental importance of chemistry to the welfare of the nation.

While the growth of chemical industries during the past year has been marvelous, nevertheless we chemists must bear in mind that, if this growth is to reach its full fruition, co-operation along the broadest lines is absolutely necessary in all of our efforts. Germany has already publicly announced the unification of all the separate establishments of its great dyestuff industry. So, too, have we learned recently of the international co-operation between the chemists of England, France, Russia and Italy. In view of such developments it behooves us to give the most serious consideration to the question of our policies in the development of the American chemical industry.

Under our national laws combinations are made illegal, and, in the past, the American chemical manufacturer has been characterized by a rather unusual amount of secretiveness regarding his operations. Surely the day has arrived for broader policies, in which the forces of this nation can harmoniously work together without sacrificing individuality to the end that the products of American chemical industry, made from our own natural resources, may not only fully supply our domestic needs, but may meet in fair competition the products of all other countries in the markets of the world.

This problem of co-ordinated effort is the big problem of this week, and, in its outworking, I urge the loyal and patriotic thoughts of every chemist.

Lawrence Addicks Follows.

In the absence of President Francis A. J. Fitzgerald, of the American Electrochemical Society, former President Lawrence Addicks brought greetings from the electrochemists, and spoke of the science of electrochemistry as the rallying point of several distinct sciences which for the past two years in particular had seen marvelous advances. He said in part:—

Electrochemistry has a peculiar responsibility which differentiates it from chemistry proper, in that it is the common meeting ground of several hitherto separated sciences, each of which overlaps to form some of the most interesting of problems. It is here that the electrical engineer and the chemist first appreciate that the directive influence of electrical energy cannot only be used to upset normal chemical affinities, but that the resulting processes offer one of the largest uses for electric power.

It is here that the chemist realizes that physics is but a branch of chemistry and the physicist that chemistry is but a branch of physics.

Metallurgy finds not alone new tools but new products. Medicine becomes interested in radio-activity, and, I am sorry to say, law in electrochemical corrosion. In this way electrochemistry has exercised a reuniting influence upon the schisms which have resulted from specialism.

In the same way the American Electrochemical Society has brought together men from widely different fields of effort, and it is only by breaking down the barriers between science and engineering and creating a compact and comprehensive profession of the entire engineering fraternity that progress in any way commensurate with present opportunity can be made.

The rapid developments of the last year have, of course, largely been due to the abnormal conditions affecting foreign commerce. Some of our exports have been in great demand, while some of our imports have been absolutely cut off. This has resulted in high values for both classes of materials, giving the needed stimulus for the development of substitutes and the founding of many new industries. And the market is not simply a temporary one dependent upon wartime conditions. In many cases the investment required has been the only deterrent heretofore; now the investment has been made. Also a product never goes to an abnormal price without permanently losing some fields of application.

For example, the high price of copper has surrendered many brass articles to enameled or brass plated iron; in other cases parts such as ship hardware have been greatly lightened. Sodium is replacing potassium wherever possible, as in glass, etc., and so on. Then, again, the actual shortage in certain products has developed processes for refining low grade material, a notable case being that of electrolytic zinc. These changes are permanent and we find ourselves suddenly carried forward through ten or fifteen years of normal progress in many lines of industrial endeavor, and, what is more, every part of this progress from the scientific research upon which it is based to the source from which the raw material is drawn is American.

Thomas J. Keenan Follows.

Dr. Arthur B. Daniels, president of the Technical Association of the Paper and Pulp Industry, was unavoidably absent, and Secretary Thomas J. Keenan spoke for him, Mr. Keenan's address following:—

The Connection Between Chemistry and Papermaking.

By THOMAS J. KEENAN,
Secretary of the Technical Association of the Pulp and Paper Industry.

The prominent part which the Technical Association of the Pulp and Paper Industry has taken in furthering the success of the exposition of chemical industries and the fact that the president of the American Paper and Pulp Association has been asked to assist at the opening ceremonies may start some people to asking what the connection is between papermaking and chemistry.

It is eminently fitting that an industry like papermaking, which comes down to us from remote antiquity, should join with the equally ancient arts of chemistry and metallurgy in celebrating the opening of a twentieth century exposition of chemical and related industries and so mark the progress of invention in this country during recent years. While it is only of late years that chemisary has found application in papermaking its connections are now many and varied. Papermaking was a purely mechanical art until the invention of the soda process of treating wood to separate the cellulose fibers, a process perfected by Burgess and Watt in 1852. The evolution of papermaking as a branch of chemical engineering began about 1880 when Tilghmann, of Philadelphia, the inventor of the sand-blast, discovered the sulphite process of reducing wood to pulp, a process which was first applied in Sweden and afterwards brought to its present state of perfection by American pulp and paper manufacturers.

Papermaking in Front Rank.

The introduction of improved machinery and the expanding use of wood fiber as material have placed the paper industry in the foremost rank of manufacturing interests. New machinery, new means, new methods have received ever increasing attention; until now, that is, within the past half century, the paper industry has kept pace with the most progressive of the arts and crafts in the forward march of advancing civilization.

The papermaker stands next to the highest place in the industrial world, for the latest census of manufactures shows that in America the manufacture of paper is second in importance only to the steel industry. The total invested capital is estimated at $500,000,000 in round numbers, while the annual value of the manufactured product of pulp and paper amounts to $350,000,000.

There has been a colossal development in the industry since the census of 1899. Within the space of ten years from 1899 to 1909 the per cent. of increase of capital was 144.4; value of products 110.2, and persons engaged in the industry 53.7. This rate of expansion was maintained for a few years, but owing to the exhaustion of pulpwood forests contiguous to mills within the borders of the United States, and partly as a consequence of our tariff policy, the growth of the business has received a check, which cannot be overcome except by the discovery of new woods and materials for papermaking in the United States or by adequate tariff protection. At the moment the industry of pulp manufacture is gravitating toward Canada where the supply of timber and the available hydroelectric power appear to be unlimited.

Dependent on Chemist and Chemical Engineer.

The papermaker is dependent on the chemist and the chemical engineer for materials, processes and apparatus for the conversion of wood into pulp and paper. The close con-

CHARLES H. HERTY,

Who Retires From His University Connections to Become Editor of Society's Principal Publication.

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ion between chemistry and papermaking been brought to the attention of the man e street by the crude yellow tinge which daily newspaper has taken on since the rtation of aniline dyes from Germany has el. The yellow color of the raw ground d which forms the bulk of newsprint paper was formerly toned to a white or bluish e tint by a combination of red and blue rs, the manufacture of which was, and is to a great extent, a German monopoly, enough of these dyes being consumed in United States to warrant their manufac- in this country.

merican chemists are now turning their ntion to the production of dyestuffs, and t they have accomplished since the inter- tion to commerce by war will be demon- ted by some of the exhibits in the ex- tion, at whose opening we are now assist-

efore closing, attention may be called to a mising development in the Southern States ough the application of chemistry and mical engineering to the recovery of paper rs from waste wood. We are now import- a special grade of pulp and the so-called ft paper made from it to the amount of e 60,000 tons annually. Immense quan- s of yellow pine waste lumber are avail- e in Florida, Georgia, Louisiana and other thern States for the manufacture of pulp the sulphate process, which yields the ng brown wrapping paper called "Kraft." is estimated that the waste from yellow lumbering operations alone is sufficient the manufacture of 10,000 tons of this er a day. A beginning in the development this industry has been made in the South ich is expected to make us economically in- endent of other countries so far as this s of paper is concerned.

f. Ira Remsen Enthusiastically Received.

r. Ira Remsen, president of Johns pkins University, and known all over land as the head of the Reference ard of Food Chemists, was given an tion. He had not been announced ong the speakers on the program, and, fact, announced himself as a "sort animated postcript after all the re- rks were over." He declared himself ther as more directly interested in science of chemistry than in the in- stry, but brought out vigorous ap- use when he said that the growth chemical science had been inseparably erlocked with the growth of chemical ustry.

A. Nagelvoort, of the Press and Pub- ity Committee, who spoke for the osition management, called particular ention to the number and the scope the exhibits in the halls adjoining, re being nearly three times as many ibits as during last year's exposition. e result accomplished, he said, had en due to the enthusiasm of the Amer- n manufacturers, and the motto of the position, as well as of the society, ght well be "Made in America." He ed the fact that there were nearly r times as many exhibits of American- de dyestuffs as during the 1915 exposi- n, and told of the immense strides ich have been made in the dyestuffs dustry in this country since the be- nning of the European war.

The entire gathering then adjourned the exhibition halls and scattered nong the widely varying exhibits.

SECOND DAY.

First General Session of the American Chemical Society at Columbia.

Dr. Nicholas Murray Butler, president Columbia University; President J. Mer- t Mathews, president of the New York ction of the American Chemical So- ty, who presided, and Dr. Hazen Em- son, Health Commissioner of the City New York, representing Mayor Mitchel d the city, were among the first to elcome the delegates of the societies the first general session at Columbia Tuesday at 9.30 a. m.

"I like to regard this meeting," said r. Butler, "as the mobilization of a rge part of civilization's immense fight- g army." Dr. Emerson explained the rk of his department. President athews declared that the convention s devoted to the discussion of prob- ms that went beyond the confines of re academic science and touched the art of American industrial develop- ent, and President Herty delivered his nual address, printed in full herewith. bstracts of the other addresses appear the order of their delivery:—

Municipal Activity in Public Health.

By DR. HAVEN EMERSON, Health Commissioner of New York City.

New York city is not unlike the human body the complexity of its functions and the dif- rentation among its units. Just as the study human physiology made scant progress until nctions, organs and even individual special- d cells were subjected to close scrutiny, so analyzing the city from the point of view the Health Department, we have passed from study of boroughs and wards to the survey census units, the investigation of hazardous ades, and still further, to the medical exam- tion of the men and women individually hom we know will suffer in a certain pro- rtion from preventable diseases and incapac- , even when to their own minds and senses ey are in perfect health.

In the first year of the organization of the ard of Health (1866) there were 8,000 deaths corded out of every 100,000 of the popula- n; in 1915, 1,400; or, to put it in other rds, if the death rate of fifty years ago evailed in 1915, there would have been re- rded 166,000 deaths, or 88,000 more than ac- ally occurred.

The death rate from typhoid fever decreased per cent. The deaths from smallpox during e first decade of health administration num- red 6,260; in the last decade, 7. In 1915 ere were relatively 2,600 fewer deaths from phtheria than in 1866. Scarlet fever showed decrease in mortality of 95 per cent. and easles decreased 50 per cent.

The greatest achievement of the administration was the reduction in the mortality from diarrhoeal diseases among children under five years of age—in 1915 a little over 8,900 children died from this disease, whereas, if the rate of fifty years ago prevailed, 18,000 children would have succumbed—a yearly saving of over 9,000 lives.

Fifty years ago, four out of every ten children born died before completing the first year of life. Today, only one out of every ten born dies before the end of the first year.

And now, what is the next step in the endless controversy with ignorance, prejudice, inertia, and the pressure of commercial competition, the four great obstacles to health protection? Unhesitatingly I say it is a forward march upon occupational diseases, the health hazards of industries. It is not enough that we admit the necessity of removal of fumes, gases and dust, and provide a better general ventilation of shops and furnaces, we must enroll ourselves among the teachers for self-protection.

If a fraction of the thought and money had been spent on the protection of the worker that has been lavished on the protection of the product against foreign competition, no cry of preparedness would be heard in the land. A healthy nation, with a spirit of regard for its human lives, will always keep out of touch of its nearest competitor. In one new factory in this city devoted to the production of aniline dyes, not a week passes without at least one serious case of aniline poisoning.

The chemical industry employs upwards of 50,000 workers now, exclusive of all those working in the petroleum industry, the paint industry and the process of manufacture which requires the use of chemicals, such as dry cleaning, felt hat making, etc.

In Germany, out of 185,820 employes in the chemical industry in 1905, there were sicknesses of eight days' duration in 88 per cent. of all employes, 11,000 accidents; gases, hot vapors and explosions causing most of them. Laborers and mechanics contributed 27 per cent. and 45 per cent., respectively, of the sickness rate from internal diseases, and 37 per cent. and 43 per cent., respectively, for sickness from external affections.

Curshman's recent statistics show that the sick rate in chemical works with improved sanitary conditons is still 54.9 per cent. per annum of the entire force, with an average duration of sickness of 17.8 days.

I appeal to you, as the brains and hearts of the greatest present and most rapidly growing industries of our time, to consecrate a part, at least, of your deliberations to a constructive policy of education of the workmen in the factories.

Dr. Charles H. Herty responded briefly, after which a short business session was held.

BUSINESS SESSION FOLLOWS.

Following the addresses a brief business session was held, at which it was voted to adjourn the meeting of the society to meet again the closing few days in December and the first few days of January with section C of the American Association for the Advancement of Science.

Dr. David T. Day, of the Bureau of Mines, Washington, told of the work done by a joint committee of scientific societies toward the erection of a memorial to Dr. Joseph A. Holmes, who had devoted his life to increasing the safety and the comfort of workers in mines. "It is the psychological moment for attacking occupational diseases," declared Dr. Day.

"An Outline of Colloidal Chemistry."

Dr. Wilder D. Bancroft, a former president of the American Chemical and American Electrochemical Societies, and now professor of electrochemistry at Cornell University, then read a prepared paper, "An Outline of Colloid Chemistry," telling what a colloid is, and how the theory of colloids aids the chemist in getting at the nature of things microscopically which would otherwise be unfathomable.

"Coal and Coke By-Products."

Horace C. Porter then delivered a prepared paper on "Coal and Coke By-Products as a Source of Fixed Nitrogen"—this was illustrated—in which he said in part:—

The fixation of nitrogen from the atmosphere for application in agriculture and the arts is an industrial development now thoroughly well established in several foreign countries. Germany's "nitrogen romance" has been a most remarkable achievement. From a production of probably 22,000 tons (as nitrogen) during the year before the war, Germany's nitrogen industry has increased in two years to about 140,000 tons, not including the by-product nitrogen from coal.

Whether in America, in the emergency of a great war and the shutting off of our foreign supply of nitrate, we should be obliged to meet the situation in the same way as Germany has done, is very doubtful. Atmospheric nitrogen fixation will without question eventually be established in this country.

At present, however, owing to conditions affecting the cost of power in this country, fixed nitrogen can commercially be had more cheaply from coal. If the supply, therefore, is adequate from the latter source for an emergency of war, there is no need of government subsidy for atmospheric nitrogen fixation. As to prices of fixed nitrogen to the farmer in times of peace the producers' prices of coal by-product nitrogen are on a par with those in foreign countries and with those of other forms of fertilizer nitrogen in this or other countries.

The available supply of fixed nitrogen from coal is adequate to this country's military needs in any reasonable contingency. By-product ammonia is being produced in rapidly increasing quantities. The crux of America's situation as compared to Germany's is that we are not called upon to reserve our entire by-product ammonia supply for agriculture; ample food crops for domestic consumption in time of war are assured us without the use of fertilizer, while Germany, on the other hand, is absolutely dependent on such use, especially of nitrogenous fertilizer, and has had even to increase her use of ammonia sulphate in this way since the beginning of the war.

The by-product coking and coal gas industries of the United States have today a capacity for making 70,000 tons of ammonia per year. Within eighteen months they will increase this capacity to 110,000 tons. From 35 per cent. to 40 per cent. of this capacity is for ammonia in the form of liquor, and, with slight adjustment of those plants making sulphate, this capacity for liquor can be increased to 85 per cent. or more, that is, to 60,000 tons of ammonia. The recent appropriation by Congress of $20,000,000 for a government nitrate plant will, if devoted to a waterpower cyanamide process installation, yield not over 20,000 tons of ammonia per year, and the probable needs of the government in the event of war have been estimated at 180,000 tons of nitric acid, corresponding to about 60,000 tons of ammonia.

America, by turning still more from beehive to by-product coking, can more than double her ammonia production without an increase of coke. Furthermore, the production and use of coke in America has every prospect of material increase, giving still larger ammonia production.

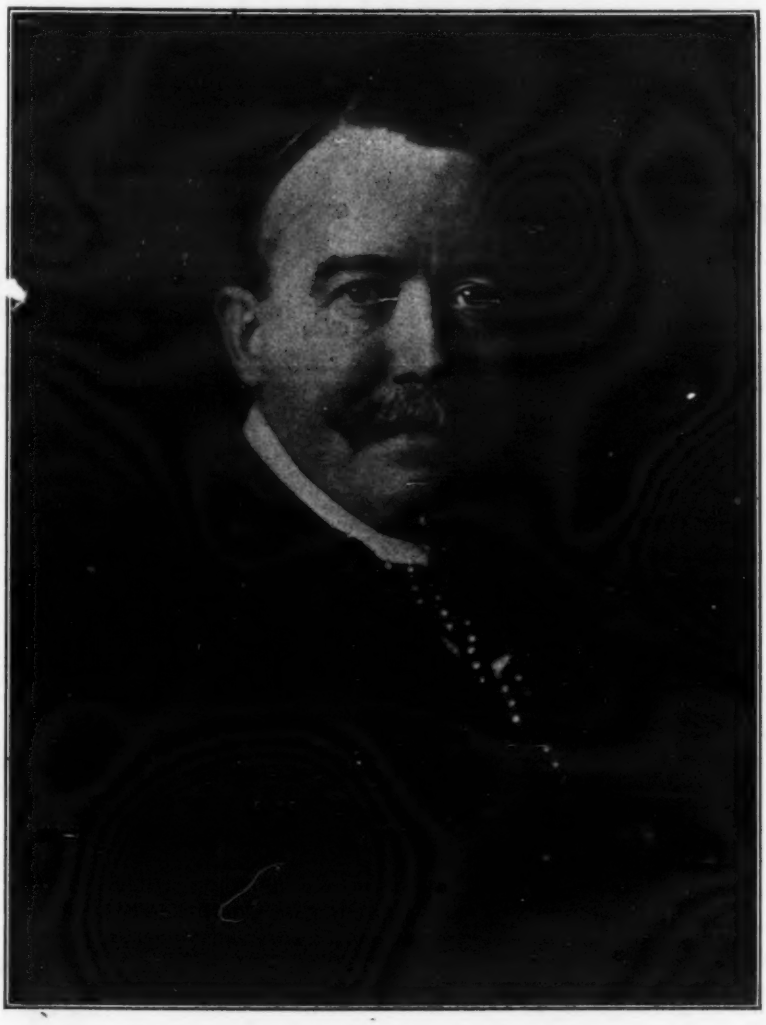
If 57,000 tons of ammonia should be used to meet the government's estimated need of 180,000 tons of nitric acid, and say 30,000 tons more of ammonia for other nitric acid, there would still remain of our 127,000 tons of by-product ammonia a balance of 40,000 tons to meet the requirements of industries. In 1915 about 26,000 tons were used for purposes other than as fertilizer.

The total coke consumed in the United States in 1915 was about three times what was produced in by-product ovens. The estimated capacity of by-product ovens for the year 1918 on plants now under construction, is probably less than 55 per cent. of the total coke which will be made in that year. By-product coking therefore has room to grow—it can almost double the capacity shown by plants now built or building before it will meet the country's present requirement in coke.

The present coke requirements are destined also to grow. The sale and use of coke for fuel purposes other than metallurgical, is rapidly expanding in this country. An amount not far from 2,000,000 tons was sold in the United States in 1915, and records of recent years show an annual growth of sales in many communities of about 30 per cent.

The by-product coking and gas industries afford our only source of benzol, toluol and coal-tar products. The present capacity of these industries would not give the nation all the toluol it should have for war needs in the manufacture of explosives. So important to military preparedness is a maximum supply of coke by-products that the government should run no risk of a setback to this industry until all of the coke shall be made with by-product recovery. On the contrary the government now proposes to build and operate a manufacturing plant, avowedly in competition with present producers of ammonia, a principal coke by-product, and thereby lower its price.

THOMAS J. KEENAN,



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Secretary, Technical Association, Paper and Pulp Industry.

PUBLIC MEETING, 2 P. M.

At 2.30 p. m. a public meeting was held at the Horace Mann Auditorium, Columbia University, at which Gen. William Crozier, Chief of Ordnance of the War Department, was the first speaker. His address was on "Chemistry and the National Welfare," and he spoke along the line of thought that in all preparation for national defense the man with a scientifically trained mind is required. Gen. Crozier devoted his attention principally to the part American chemists and scientists would be called upon to play in preparing this country to meet war's exigencies, and to their further opportunities in preparing factories and laboratories in time of peace.

"Chemistry and Banking."

John E. Gardin, vice-president of the National City Bank, followed with an address on "Chemistry and Banking," in which he said in part:—

The capital invested in the chemical industry in this country, not alone directly, but indirectly, is something enormous, and unless we enter upon a campaign of preparedness now we are likely to receive some very rude shocks when the other war—that is, the economic war of nations—is launched upon us.

Theorizing is all very well, but it does not take a very astute mind to determine that if the flood gates are open for the influx of the world's products later on a great deal of this capital will be absolutely wiped out, and it, therefore, behooves the banker, the merchant and the professional man to put his best efforts behind the one thought at the present time, and that is, to create a stability in our production that will resist all attempts of the outsider to overcome.

The chemical industry of the United States is making wonderful strides. It has quadrupled its output since 1880, and doubled since 1905.

The capital invested is over six times as much as in 1880, and more than double that of 1905. This relates to the group of products classed by the census, from which the above figures are quoted, as "general chemicals." The capital in 1880 was $29,000 000; in 1910, $155,000,000, and in 1915 approximately $220,000,000, this estimate of capital for 1915 being based upon official figures of product of that year. The value of products turned out was in 1880, $39,000,000, and in 1915 approximately $158,000,000.

In addition to this there is a large group of products, many of them very important, classified by the census as "allied industries," including fertilizers, dyestuffs, explosives, essential oils, wood distillation, sulphuric and nitric acids, bone, carbon and lampblack, and paints and varnishes. The value of the output of these "allied industries" is much greater than that of the group classed distinctly as chemicals, having been in 1880 approximately $72,000,000, and in 1915, $400,000,000; the capital employed in 1880, $57,000,000, and in 1915 approximately $480,000 000.

Chemicals form an important factor in the foreign trade of the United States, both as to imports and exports. Prior to the war, imports of chemicals were largely in excess of exports, but the war has greatly increased the exportation of articles included in the general group "chemicals, drugs and dyes." The total imports of chemicals, drugs and dyes has grown from $48,000 000 in 1896 to $70,000,000 in 1906, and $109,000,000 in 1916. The exports of chemicals, drugs and dyes were in 1896, $9,000,000; in 1906, $19,000,000; in 1914, the year preceding the war, $27,000,000; in 1915, $46,000,000, and in 1916, $124,000,000; all of the above figures of imports and exports being for the fiscal year ending June 30.

The United States is apparently the world's largest importer of chemicals, the imports of Germany in 1913, the year prior to the war, being about $75,000 000. Great Britain $70,000,000, and France $50,000,000. The exports of Germany for 1913 were $140,000,000, Great Britain $60,000,000, and France $25,000,000.

Dr. Herty's Annual Address.

The concluding speaker was President Charles H. Herty, whose annual address is printed herewith in full:—

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ADDRESS OF PRESIDENT HERTY:—EXPANDING RELATIONS OF CHEMISTRY IN AMERICA

After a year of such strenuous service as characterized that through which we have just passed, it is well that we are again assembled for report on the work of our laboratories and for helpful conference concerning future growth and broader service. A large part of the past year's work has, through the suddenness of the call, been necessarily individualistic; the assemblage of this week furnishes the means for planning more co-ordinated effort, for mutual counsel and for deepening that spirit of co-operation which is so essential if we are to worthily meet our full responsibilities.

It is again incumbent upon me to address you. In seeking a subject I have put aside the temptation to lay before you statistics illustrative of marvelous growth during the past year, and, in spite of our belief in specialization, it has not seemed suitable to select any one line of development for tracing in thorough detail. This period is still too formative and the demands upon you too many sided for such restricted discussion. I have, therefore, selected the broader topic, "The Expanding Relations of Chemistry in America," using the present participle advisedly, as indicative of growth and as mandatory of greater effort if the widening circles of chemical influence are to reach the broad shores of full-fledged accomplishment.

The dynamic center of this movement is the American Chemical Society, which now consists of 8,136 members, a net growth of more than one thousand during the year just ended. This splendid growth is not only a tribute to the energetic activities of our efficient secretary, but is an evidence of increased activity in chemistry and of a quickened realization of the need of the strongest possible national organization. The strength of this organization, however, is not measured so much by numbers as by the loyal and unselfish response of its members to every call made in its name. To this I can abundantly testify.

In considering the expanding relations of chemistry in America, let me group these under four heads—the relations to university administrations, to the national government, to our daily needs and to national thought.

Relations to University Administrations.

Without doubt, university executives have gained during the past year a clearer conception of the fundamental value of chemistry to the nation. Aside from our own exhortations, this conception has been easy of obtainment through the increased publicity given by the daily press and by periodicals to matters chemical, through the difficulty of purchase of certain needed supplies, through the feverish activity to meet these unexpected demands, and through the call for young chemists from university laboratories. Has the conception, however, been translated by the makers of university budgets into deeds which will insure an adequate response by the universities to the increased demand which is to be made upon them for chemists possessed of the best possible training? I have neither purpose nor desire to criticize, nor even to attempt answer, but I do not hesitate to suggest that in these abnormal times the demands upon chemistry departments are unusually great and should be generously met if we are to view the future with equanimity. The bounds of the service of chemistry to the nation are prescribed by the character and extent of the training given in our universities. Physical equipment must be increased and bettered, and staffs must be maintained adequate in number to allow full opportunity for research along with teaching duties.

The stimulus of these remarkable times upon the minds of the students is plainly evident, but here lies a danger. The expansion of existing industrial plants and the creation of new lines of endeavor in chemical industry call for many young men to serve in control work, and the call is often very alluring. It would be a great misfortune if the filling of these new positions should be at the expense of the graduate students of the future. We cannot afford an abridgment of the number of young men thoroughly trained in our universities in the methods of research. Graduate fellowships in largely increased number should be provided, for without such aid the door of opportunity will be closed to many whose full mental potentialities will be needed in the future.

The danger of losses from university ranks, however, is not confined to graduate students; already there are strong indications of a considerable raid by the industries upon the staffs of universities, and the question of professorial emolument is therefore not one for leisurely future consideration, but belongs to the immediate present.

To sum up, the university budget for chemistry needs prompt and decided expansion.

Universities and Industries Co-operate.

In the matter of co-operation between universities and industries, definite progress has been made. Four important matters typify this progress.

The New York Section has conducted throughout its winter meetings a symposium on this subject, and these discussions resulted in a request of the society that a permanent committee be appointed to carry forward vigorously such co-operation.

The General Chemical Company announced the formulation of a new policy in the creation of an advisory staff of university professors.

The Massachusetts Institute of Technology announced a master's course in chemical engineering, including a school of chemical engineering practice. Through the co-operation of industrial plants a half year of systematic plant experience and training is added to the curriculum without sacrifice of thorough foundation work or training in research. In return for the privilege offered by the plants, the research facilities and the faculty of the institute will be available for the study of special problems connected with each plant.

A joint meeting of the Puget Sound Section and the Seattle Chamber of Commerce aroused great enthusiasm and resulted immediately in the creation of industrial fellowships in the University of Washington for the study of the problems of the Northwest.

Such illustrations furnish proof that earnest thought is being given to this phase of co-operation, and it is inspiring to note how quickly such thoughts are being translated into definite action.

Relations to the National Government.

Forty-nine members of the society, representing the several States and Alaska, on appointment, responded to the request of the President of the United States that the chemical industries be mobilized under the program of the organization for industrial preparedness. Publication of the correspondence in connection with these appointments would furnish lasting testimony to the loyal and unselfish patriotism of the membership of our organization.

In response to the invitation of the National Academy of Science our representatives are now co-operating in the organization of the research facilities of the nation and in questions connected with the establishment of the government nitrate plant.

If we are to promptly and intelligently proceed with the development of a diversified and comprehensive chemical industry we must know the detailed character and amounts of chemical importations. The statistics now published by the government are inadequate in their classification. The formulation of the character of the information needed is our responsibility. This the work of the Committee on Government Statistics, of which committee Dr. B. C. Hesse is chairman. The inauguration of the work has unfortunately but necessarily been delayed. It is now well under way, and for its full consummation I beg to urge the thoughtful aid of every member of the society and the co-operation of each of the local sections. We have never undertaken any more important or fundamental work than this. If, as a result of this inventory, we are able to state in exact terms the specific character of the information needed by the chemical industries, in order to render this country independent of foreign sources of supply, we will then have a right to expect with confidence the sympathetic co-operation of the Federal authorities.

What the Government Should Do.

May I, under this heading, make two suggestions to the national authorities:—

First, provision should be made in the immediate future for the storage of large quantities of government-owned toluene. With the cessation of European war orders for explosives, and with the rapid increase of by-product retort ovens for coke manufacture, we will eventually have a large overproduction of toluene, with consequent lowering of price. The potential value of this hydrocarbon in munitions is too great to allow its sacrifice as a fuel or as an illuminant, and its storage involves no unusual difficulties. The moral effect alone of its known presence in our midst would in itself fully justify the investment as a preparedness measure.

Second, modern warfare is largely dependent upon the successful work of chemists, not alone in the direct production of munitions, but, through research, in husbanding the resources of the country and in increasing knowledge which in times of stress may be vital to the nation. In view of the now well recognized fundamental character of such work, the military authorities should formulate a definite policy in regard to the chemist, whereby in times of war his services may best be applied to the advantage of his country. The lack of such a policy during the recent enlistment of the National Guard has in several cases interrupted lines of research whose successful outcome would prove much more vital to the power of the army than the presence of the individuals bearing arms. England somewhat tardily recognized that her chemists were more needed at home than at the front and therefore recalled them.

Relation to Our Daily Needs.

The economic developments of the past two years have emphasized the close relation between normal daily needs and the activity of chemists, particularly through certain shortages which have brought economic distress. Among these shortages three stand out preeminently—motor fuel, potash for fertilizer and coal-tar products, particularly synthetic dyestuffs. Let me discuss the first and second of these briefly and the third more at length.

Motor Fuel.

The enormous annual increase of motors using gasoline as fuel, together with the largely increased export of this material, has resulted in greatly increased price of this product. To meet the situation, chemists have naturally turned their attention to the "cracking" of the residues of crude petroleum, furnishing thus some relief. In view, however, of the uncertainty of petroleum supply, such efforts cannot prove the ultimate solution of the problem. With the cessation of the war further aid may be expected from the ben .. .. aid may be expected from the benzol recovered in the by-product coke oven plants. With this at its maximum, however, it is estimated that it would equal only 10 per cent. of the motor fuel now consumed. Plainly, we must look further for the permanent supply, and that seems to me to be alcohol. I am fully aware that there is nothing orignal in this suggestion. It is mentioned rather for the purpose of urging greater consideration of the problem by chemists, who must solve the problem; by manufacturers of motors who have great interests at stake, and by lumbermen who, in their mill waste alone, possess the raw material from which, by processes in operation today, alcohol could be produced equal in volume to 40 per cent. of our present gasoline consumption.

What striking advance in this line could be confidently expected if the automobile manufacturers and lumbermen of the nation would join forces with chemists in the creation of a great research laboratory where the problems of motor fuel could be vigorously attacked, not by the "green powder" method of recent notoriety, but by common sense, scientific investigation, conducted by the ablest of chemists and chemical engineers, unfettered by tradition and filled with the conviction that the day of genuine new things will never end.

Potash.

To meet our present shortage of this valuable fertilizer constituent, we have sought relief feverishly through the kelp fields of the Pacific coast, the alunite deposits of Utah, the feldspars, blast furnace and cement works waste, and have as yet obtained but slight relief. Something noteworthy may yet result from these earnest efforts, especially through the aid of the appropriation of $175,000 by Congress for further investigation of kelp, but at present we seem to have adopted the general policy of waiting until the war is ended.

Let me, in this connection, remind you of the old problem, namely, the rendering available in situ the potash now in the fields in the form of silicates. The records of the United States Bureau of Soils show that the average weight of a foot acre of the sandy soil of the cotton belt weighs 1,760 tons, and contains an average of 0.1 of 1 per cent. of potash, or 1¾ tons KH_2O per acre, while the clay soils average in weight 2,000 tons per foot and show an average of 1.68 per cent. potash content, or 33.6 tons KH_2O per acre. From this material nature slowly supplies available potash for plant food through the action of the soil solution upon the potash-bearing silicates, but the process is too slow. Many lines of research are in daily progress in our laboratories whose object is the discovery of "accelerants" for certain chemical reactions. Does not the importance of this problem and its altogether normal character demand of us greater effort to find a suitable accelerant for this world-wide process? The problem is easy to state; its solution has as yet proved impracticable. May we not hope that the activities of physical chemists through studies of the soil solution and its action upon the mineral constituents of the soil will ultimately be successful?

Coal-Tar Dyestuffs.

It is unnecessary for me to remind you at this time of the great disturbance of our industrial life which resulted from the cessation of imports of German dyestuffs, nor of the rapid extension of the by-product coke oven whereby we are now assured of far more than adequate supply of raw material for an American dyestuff industry sufficient for American needs. It is a pleasure to testify to the energy and resourcefulness of our dyestuff manufacturers who, in spite of competiton with the munitions industry for coal-tar crudes and for necessary acids, and with uncertainty as to the future constantly dogging their steps, nevertheless have notably contributed to the relief of the dyestuff famine.

It is my purpose, however, to trace, for the sake of the record, the efforts made during the past two years to obtain legislative assurance of a fair start in the upbuilding of a well-rounded, permanent industry, and to point out the character of the legislation which on the last day of the present session of Congress became a law of the land. It is a distressing story, humiliating to all who wish for our country freedom in every possible form. Here is the story:—

The Story of Dyestuff Legislation.

Immediately after the outbreak of the war, the New York Section of this society, foreseeing economic distress from possible shortage of dyestuffs, appointed a representative and politically non-partisan committee to report on the prerequistes of an adequate, self-contained American dyestuff industry. The report, unanimously adopted by this the largest of our local sections, recommended Congressional enactment of protective duties amounting to 30 per cent. ad valorem and 7½ per cent. per pound specific on finished dyestuffs, one-half of these amounts on intermediates and an effective anti-dumping clause. The protective rates of this report formed the basis of the Hill bill, introduced in the House on the opening day of Congress by Representative Ebenezer J. Hill, of Connecticut. In January, 1915, hearings were held on this bill and there was presented the unusual sight of both producers and consumers urging the Ways and Means Committee to report the bill favorably. In spite of this unanimity, the report was not forthcoming. Public demand for such legislation, however, increased and finally, after a conference between leading members of the controlling party in both the House and Senate with representatives of a large number of producers and consumers, a form of legislation was proposed by the Congressional representatives which embodied the ad valorem rates of the New York Section, but reduced the specific duties by one-third, such specific duties to continue in full force for a period of only five years, after which time they were to decrease 20 per cent. annually. Another feature was the proviso that if, at the expiration of five years, American dyestuff factories were not producing 60 per cent. of the values (note this carefully) of American consumption, the specific duties were to be immediately and completely repealed by Presidential proclamation.

Exclusions of Indigo and Alizarin.

In spite of the lowered specific duties, this agreement, confirmed by authorized interviews from Washington, led to increased activity by many producers. It is not difficult to imagine, therefore, the amazed surprise which greeted the appearance of the dyestuff section of the general revenue bill, which, while it contained all of the above, showed one other totally unexpected feature, namely, the exclusion of indigo and alizarin and their derivatives from the benefit of the special duty of 5 cents per pound. Such an exception was fatal to the purposes of the bill. The ad valorem duty alone would not suffice to promote and encourage the manufacture of synthetic indigo and alizarin. No scientific or technical justification existed for discrimination against these two coal-tar dyes, which constitute 29 per cent. of the values of our consumption. Furthermore, the manufacture of at least 10 per cent. of dyestuffs could not for the present be attempted in this country because of existing foreign patents. Such considerations show that the possibility of expansion of the home industry within the five-year period to 60 per cent. of the values of consumption would be precluded by the terms of the bill itself. Consequently, the duration of the special duty for any dyestuff would be restricted to the initial five-year period. Evidently our law-makers had surpassed the skill of the alchemists, in that they had demonstrated their ability to transform at least bricks into gold.

Chairman Kitchin's "Justification."

Pressed for a justification of the exclusion of indigo and alizarin, the chairman of the Ways and Means Committee made explanation on the floor of the House in a speech which by previous agreement was to conclude the debate. In this speech reference was made to the satisfactory character of the conference with the representatives of the industries; individual manufacturers were referred to as not desiring full protection for indigo and alizarin, and no justification on scientific or technical grounds was attempted. Then the dyestuff section of the bill was adopted by a party vote. Immediately briefs were filed with the sub-committee of the Senate Committee on Finance in charge of this section of the House bill. These briefs included letters and telegrams from the individuals referred to in the House debate, refuting the statements made by the chairman of the Ways and Means Committee. Moreover, they pointed out clearly that the exception of indigo and alizarin was not in accordance with the original conference agreement and would prove disastrous to the entire industry. The Senate sub-committee was convinced and accordingly struck from the bill the objectionable exceptions, and in addition included natural indigo and coal-tar medicinals and flavors, additions in every sense logical, and giving to the classifications of the bill a thoroughly comprehensive character.

With the appearance of the printed hearings

CHARLES E. PARSONS,

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Secretary, Americal Chemical Society.

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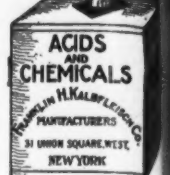

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d briefs, an interesting exhibit was made the plea of a large consumer of indigo ated at Greensboro, N. C. Not content with discrimination given indigo in the measure passed by the House, he urged its complete moval to the free list. No other consumer Indigo joined in this request. The sub-com- ittee rejected his plea.

Last Hour Revision.

The completed section of the revenue bill as then indorsed by the full committee and by the majority-party conference, and was adopted by the Senate. In the last hours of the session the section emerged from the joint conference of the majority-party conferees from both Senate and House with indigo and alizarin excluded from the special duty, and carrying along with them as a sort of legislative by-product medicinals and flavors. As no record is published of the proceedings of conference committees, we are left to assumptions as to the influence which prevailed to give the section its final form, but in the light of the history of the legislation and the personnel of the conferees, as published in the Congressional Record, it is not difficult to imagine whose influence was determinative in maintaining the discriminatory feature of the original House legislation, against which limited protest has been made, save for the voice of one consumer. The section in this disastrous form was then adopted by both Senate and House and is now the law of the land.

Such is the answer of the present Congress to the nation-wide (with one exception) call for adequate protective duties for the encouragement and upbuilding of this much-needed industry. The claims of this industry, upon non-partisan legislative aid, are reasonable, because of initial difficulties in manufacture and the character of the competition to be met after the war. These claims are also commanding, through the intimate connection of the industry with adequate munitions for our army and navy. Nevertheless, the measure, professedly enacted for its upbuilding, stands today stamped with the evidence either of the most specialized form of legislation for special interests, or of stupidity, as a tax placed upon the consumer without the benefit of an assured home industry, or of stubbornness in maintaining a wrong position rather than admit an error in judgment. I do not believe the citizens of this nation will set the seal of their approval upon such legislation.

Relations to National Thought.

In the light of the activities of the past year, let us ask ourselves frankly—what is the position of chemistry today in the thought of the nation? No one can doubt that it occupies a much more prominent place. This is due in part to the superb response American chemists have given to the sudden call upon their resources and ingenuity, in part to the advertisement through the press of the important role of the German chemist in the industrial upbuilding of that nation, and to the constant repetition of the phrase that modern war is largely a matter of chemistry and engineering.

Concrete evidence of increased appreciation of chemistry is furnished by the Second National Exposition of Chemical Industries, now in progress. Its exhibitors are more than double those of last year; its exhibits show many new products, born of the exigencies of the year; its underlying thought has been broadened to include a more systematic showing of the importance of chemistry to the wise use of natural resources, and its purposes have gained a far wider and more appreciative understanding by our people as a whole.

Again we find evidence in the recent issuance of a special chemistry edition by a prominent trade journal, The Manufacturers Record. The purpose of that unusual issue was not merely to emphasize the advantages of a great section of the country for the upbuilding of chemical industries, but, of far greater importance, it sought to vitalize the thought of the people of that section as to the undamentalf character of chemistry among the factors of industrial development.

Signs of the Times.

Furthermore, it must be noticeable to all that slowly but surely an educational campaign is getting under way in the daily press and in periodical literature which will eventually result in the arousal of our people to a full comprehension of the value of chemistry as a national asset.

These are simply signs of the times. We cannot, however, feel that the national thought has as yet grasped in its entirety the all-pervading influence of chemistry so long as Cornell University, with its strong chemistry staff, must delay the replacement of its burned laboratory through lack of funds; so long as Johns Hopkins University, the cradle of American chemical research, must undergo such struggle for the means to erect a new laboratory on the beautiful new site of that institution; so long as members of Congress view chemists and chemical manufacturers as fit subjects for hard bargaining; so long as railway presidents feel that chemistry has no part in the development of the natural resources of the sections traversed by their lines, and so long as waste in any form is allowed to continue unheeded.

Further expansion of the relations of chemistry to the national thought involves:—

First—Continued educational effort through the press. Plans for such are being evolved, and these plans are meeting the quickened sympathy of the leaders of the press. Each of us must co-operate in this work. As a class, we are not qualified to write in proper style, and in the past we have not troubled ourselves very much about such matters, but we can furnish facts and sound opinion to those who have the work and responsibility of popular presentation, and we should stand ready, each in his own community, to share in such co-operative effort.

Second—An awakening of the financial interests of the country to the fact that the ways of chemistry are not mysterious but applied common sense which constitutes a sure guide.

Third—Continued worthiness of our own efforts. This is our direct responsibility. Thoroughness of training, untiring zeal in work, aggressive conservatism in counsel, courage in new undertakings, independence in thought, generous co-operation, constant search for truth—these must surely lead us to that vantage ground where we can best serve this our country.

A reception at the Hotel Astor, to which members and guests and members of the American Electrochemical Society and the Technical Association of the Paper and Pulp Industry were invited, brought the day to a close.

THIRD DAY.

Dr. Thomas H. Norton's Explanation of the Dyestuffs' Census Arouses Interest.

Wednesday was a day of conferences and of various sessions of the many divisions making up the society. The greatest interest, however, was aroused by the industrial conferences in the afternoon at 2.30 o'clock, one at the Grand Central Palace, with John A. Mathews presiding, on "Electric Furnace Steels and Alloy Steels," and the other on "American Dyestuffs Manufacture" with President Charles H. Herty presiding, at the Chemists' Club in Rumford Hall.

At the dyestuffs session, Mr. Wigglesworth, of the General Chemical Company, the first speaker, questioned whether or not conditions in the United States warranted the establishment of a domestic dyestuffs industry since in European countries government-protected and subsidized monopolies protected the manufacturers in a manner not possible in the United States.

It was the dyestuff session that Dr. Thomas H. Norton, dye expert of the Bureau of Foreign and Domestic Commerce, made public the result of a year's work by the bureau in assembling a resume of the production of artificial dyestuffs in this country, showing just where the manufacturer stands, just what he produced up till the outbreak of the European war, and other features never before made public. In this presentation which is given in today's issue of the Reporter, and an abstract of which was printed in our columns last week, Dr. Norton spoke as follows. The address was illustrated by a chart, which is reproduced, with the permission of Dr. Pratt, Chief of the Bureau, and of Dr. Norton.

Dr. Norton's address was printed in part in the Reporter of September 25, page 74. The tables covering the imports of dyestuffs will be found elsewhere in this issue.

Following Dr. Norton, Dr. J. F. Schoellkopf, Jr., of the Schoellkopf Aniline and Chemical Works, outlined in detail what his company had done and was planning to do. He made a plea for the American dyestuffs industry, declaring that it needed capital and reserve funds in view of the enormous number of dyes to be made to compete with foreign production, and brought out the fact that 50 dyes today are bearing the burden formerly carried by a thousand, when the importation of German aniline colors was at its height prior to the war. He instanced the amount of time and experimentation necessary in the perfection of German anilines, and quoted one company which he asserted had spent $3,000,000 on one color before placing it on the market.

Messrs. Dow, Herty, Delany and Dr. J. Merritt Mathews participated in the discussion which followed. Dr. Mathews, in view of the statement to the Oil, Paint and Drug Reporter by Director Ralph, of the Government Bureau of Engraving and Printing at Washington, that while willing to purchase dyes in this country he is unable to do so in the quantity and quality desired, introduced the following resolution, which was adopted:—

Resolution of Protest.

Whereas, Director Ralph of the Government Bureau of Engraving and Printing declares in a statement to the Oil, Paint and Drug Reporter in the issue of October 2, 1916, that while he is in sympathy with the idea of purchasing dyes for the use of his bureau from American manufacturers, he has found it "impossible to obtain such supplies, although during the past two years he has made every effort to get them"; and

Whereas, Director Ralph declares himself ready today to purchase large quantities of reds if he could get them; and,

Whereas, Director Ralph has placed an order with a German manufacturer for the delivery of printing red (lake red No. 1), 40,000 pounds; permanent red (lake red No. 6), 20,000 pounds; Chinese blue, 25,000 pounds, and Prussian blue, 60,000 pounds, which can only be delivered by authority of the British Government in temporarily raising the embargo now existing to allow such shipments to the United States Government; be it

Resolved, That we believe it the province of the American Chemical Society to investigate the status of the American dyestuffs manufacturers as possible sources of such dyes for government use, and that the matter be referred to a special committee for investigation and report as a guide to the American chemical dyestuffs industry in thus meeting the demands of the United States Bureau of Engraving and Printing.

Dr. Schoellkopf declared that the government had never made inquiry from American manufacturers, and during the discussion which followed the assertion was made that these dyes were being manufactured satisfactorily in this country.

Resolutions were also passed protesting against the passage of the indigo and alizarine provisions of the Federal revenue bill, signed by the President last month, because of the exclusion of the direct impost of five cents a pound on indigo, natural and synthetic, and the alizarines, as contemplated under the House bill and the Senate bill, and which were excluded in the conference bill which afterwards became a law.

Dyestuff Revenue Resolution.

Whereas, The Revenue bill (Title V Dyestuffs), which recently passed the Senate after hearings of representatives of producers and consumers, accorded to all classes of dyestuffs without exception an ad valorem duty of 30 per cent. and a specific duty of 5 cents per pound; and

Whereas, In the final conference between the House Ways and Means Committee and the Finance Committee of the Senate, and without further hearings, "Natural and synthetic alizarin and dyes obtained from alizarin, anthracene and carbazol, natural and synthetic indigo and all indigoids whether or not obtained from indigo, and medicinals and flavors" were made exceptions and to carry no specific duty and to have only the 20 per cent. ad valorem duty.

The Dyestuff Conference of the American Chemical Society in a meeting held in New York September 27, without a single dissenting vote, condemns the exception of these dyestuffs from this specific duty, as this exception undermines the very foundation upon which it was hoped that the American Dyestuff Industry might be built. It makes it impossible for the American manufacturer to meet the requirements of this bill "if, at the expiration of five years from the date of the passage of this act, the President finds that there is not being manufactured or produced within the United States as much as 60 per cent. in value of the domestic consumption of these articles, he shall by proclamation so declare, whereupon the special duty imposed by this section on such articles shall no longer be assessed, levied or collected."

And whereas, The value of these excepted classes of dyes amounts to approximately 30 per cent. of the dyes consumed in the United States of America, without considering the dyes patented by foreign manufacturers.

Therefore be it resolved, That we condemn the removal of these dyestuffs from the special tariff accorded them by the Senate as detrimental to the establishment and development of the American dyestuff industry and subversive of the best interests of the American people.

Committee in Charge of Investigation.

The following committee was appointed to take up both resolutions:—

Dr. Jerome Alexander, who made the motion in regard to the tariff bill provision protest; Dr. Henry Wigglesworth, J. Merritt Mathews, J. F. Schoellkopf, Jr., and W. Beckers.

Filled with Technical Discussions.

Outside of this feature the day's program was not one which would attract the layman. The principal symposium in the morning was on "Colloids," with a joint session of the Biochemical, Physical and Inorganic Chemistry Divisions at Havemeyer Hall. "Colloid chemistry," to qoute from a definition given, "is the chemistry of grains, drops, bubbles, filaments, films, etc., which touches everything in every-day life and industry—brick, pottery, cement, varnish, soap, rubber, milk, photography, purification of water and sewage, etc."

In addtion to the meetings above designated, the Division of Industrial Chemists and Chemical Engineers met at Schermerhorn Hall; the Organic Chemists at Earl Hall; the Water, Sewage and Sanitation Chemists at Havemeyer Hall; Agricultural and Food Chemists at Mines Building; Fertilizer Chemists at Rumford Hall, Chemists' Club; and the Division of Pharmaceutical Chemistry at the New York College of Pharmacy. Dr. Lyman F. Kebler was elected chairman of the latter division at the morning session, and Dr. George D. Beal was re-elected secretary. Dr. Kebler is the chief of the drug laboratory of the United States Department of Agriculture. These officers will preside at the Kansas City meeting. The papers presented in this division included the following:—

"Aromatic Sulphuric Acid, U. S. P.," by W. B. D. Penniman.

"The Registration of Proprietary Remedies" and "A Bill to Regulate the Use and Registration of Professional Degrees in New York State," by Louis Hogrefe.

"Chemicals Admitted Into the U. S. P., IX.," by Otto Raubenheimer.

"A Demonstration of Standardized Colored Fluids," by Dr. H. V. Arny, New York College of Pharmacy.

Dr. Long, the chairman, has intimated that some of the errors perpetuated in the 9th revision U. S. P. indicated a failure to consult competent chemical authorities. Other critics have said that manufacturers should be consulted. In reply to these, Dr. Raubenheimer said that all the circulars dealing with the essential oils had been sent out to essential oil manufacturers, that all circulars regarding chemicals had been sent out to chemical manufacturers, and that these manufacturers had co-operated in the work of criticism and revision. All the matters of purely chemical character have been referred to the chemists of the committee for their decision; all matters pertaining to medicine have been referred to the medical members of the committee, and involved papers have been worked out by professional mathematicians. An effort has been made throughout to consult the highest authority in every special field. He explained that the question of the delay in the delivery of the Pharmacopœia was due to circumstances beyond the control either of the committee, the trustees, or the publishers. The publishers have had contracts for paper and ink. Owing to the unusual conditions incident to the war, supplies of these articles could not be obtained promptly, but now deliveries are being made rapidly, the printers are working night and day, and he had seen copies of the Pharmacopœia numbered above 9,000, indicating that at least that number have been delivered. In order to cover the difficulties presented by the assumption that the new Pharmacopœia was official from September 1, according to his understanding, the Board of Trustees were about to issue a statement to the effect that the standards of either the U. S. P. 8 or the U. S. P. 9 would be considered as satisfactory up to a certain date to be determined in the near future. This date would probably be December 1 or January 1.

The following pharmacy abstracts will be found of interest:—

DR. A. P. HALLOCK,

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Treasurer of the American Chemical Society for a Quarter Century.

Constitutional Powers of the Board of Health, and the Registration of Proprietary Remedies.

By LOUIS HOGREFE.

The author briefly described the origin of the powers of sanitary officers, the necessity for the broad scope of the executive powers vested

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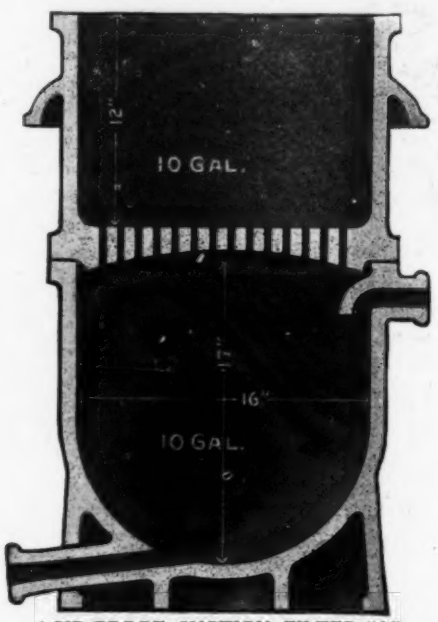

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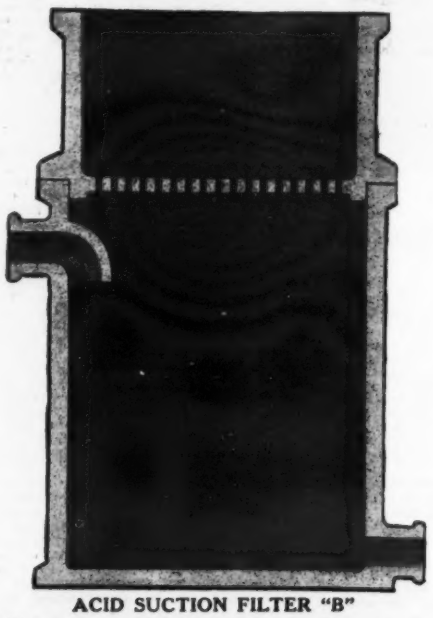

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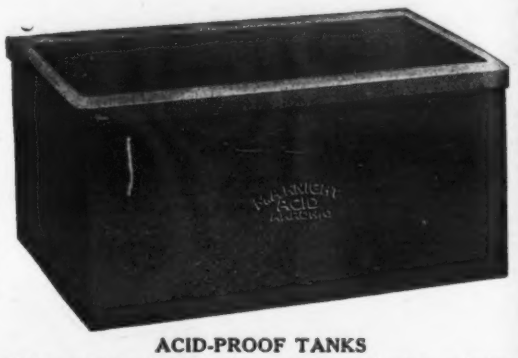

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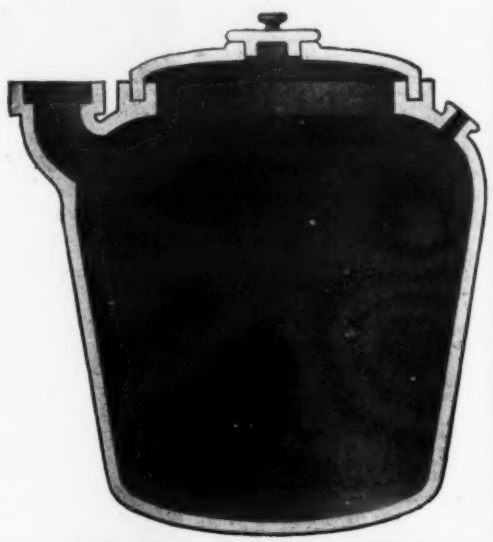

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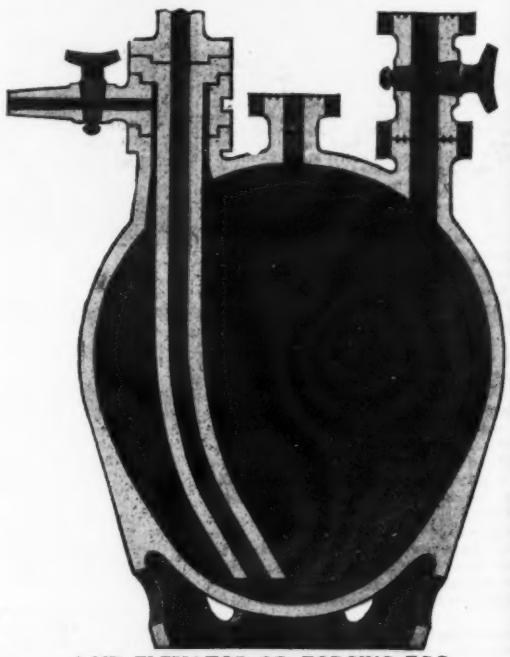

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...the health officers, the use and abuse of these ...wers.
...e then went into details of the legislative ...wers conferred on the Board of Health, ...ir use and abuse, and, finally, the appli...tion of these powers to the subject of regis...tion of proprietary medicines.
...e took up the subject from legal, profes...nal and practical point of view.

...Aromatic Sulphuric Acid, U. S. P.

...W. B. D. Pennlman, W. W. Ran...ll, C. O. Miller and L. H. Enslow.

...he authors find that the methods of assay ...aromatic sulphuric acid prescribed in the ...S. Pharmacopœia (Eighth Revision, 1905; ...plementary Revision, 1907; Ninth Revision, ...0) are all unsatisfactory, in that they do ...t secure the complete conversion of the ...yl-sulphuric acid present into sulphuric acid. ...e reason for this failure lies in the fact ...t the reaction involved,

$C_2H_5 \cdot HSO_4 + H_2O = C_2H_5 \cdot OH + H_2SO_4$,

...reversible, and therefore can become com...te only when the alcohol formed is removed ...fast as it is produced; otherwise the reac...n proceeds only to the point where equili...um is established among the four reacting ...bstances. Hence the employment of an effi...nt reflux condenser is incompatible with the ...l sought. Heating in open vessels on a ...ter bath on the other hand leads to exact ...sults.
...he authors describe many experiments car...d out in a study of the conditions under ...ich the hydrolysis of ethyl-sulphuric acid ...es place.
...he paper contains a description of a very ...cient distilling tube used for the separation ...liquids whose boiling points differ by com...atively few degrees.

...e and Registration of Profes...sional Degrees.

By LOUIS HOGREFE.

...n this paper the writer discussed the neces...y of preserving the honor and integrity of ...e professional world.
...ormerly the bunco-steerer and confidence ...n always had some clergyman on the Board ...Directors. Today things have changed some...at.
...ot long ago this city was stirred by a man, ...o awaiting the electric chair, who claimed ...be a famous surgeon and physicin.
...young man arrested for smuggling by the ...thorities of the United States Government ...ed as Dr. Phil, from the University of ...penhagen.
...inally, we have the now famous University ...Odessu, Franklin county, Washington. This ...titution sells doctors of science degrees and ...ything else there is demand for. Charges ...ording to buyer's purse.
...he writer suggested registration of profes...nal degrees by the Board of Regents, and ...king it a misdemeanor to obtain money, ...ds, chattels, etc., under false pretenses, ...ere the false pretense is a fraudulent degree.

...gricultural and Food Chem...ists.

...uch subjects as raw sugars, maple ...oducts, sucrose contents of sugar beets, ...termination of minute quantities of ...tal in organic substances, determina...n of added water in milk, chemical ...ality of New York City milk, and sev...l other papers relating to milk fats ...d solids, were discussed at this session.
... Lucius P. Brown presented the re...lts of more than 200,000 analyses of ...lk, and the methods of milk inspec...n carried out by the Department of ...alth were explained.

...me Aspects of Food Standardiza...tion.

By A. McGILL,

...ief Analyst of the Inland Rev...enue, Ottawa, Canada.

...he advantages of fixing standards for foods ... undeniable. They contribute a guide to ...nufacturers, dealers and the public; enable ...d officials to judge foods, and the law courts ...pronounce a verdict. Nevertheless, a care...study of numerous cases proves that legal ...hat butter, and probably legal milk, cream, ...e juice and certain other foods are not on ... average as good as those articles were ...ty years ago. The public should under...nd that the phrase "up to standard require...nts" does not mean that the article is the ...t of its kind.
...he common name of a food is the consum... trade-mark, and should be protected in ... interests. Equivalent terms should have ...al recognition. In certain classes of food, ...se value chiefly depends upon their nutri...t quality, standards should consider this ...t. This specially applies to breakfast ce...s, to infants' and invalids' food.
...tandardization should take account of im...vements in manufacture. Standards should ...as simply stated as possible, and should be ...blished extensively. It is of the highest im...tance that the public should be intelligently ...rmed in the matter.

...dustrial Chemists and Chemical Engineers.

...otash from kelp, preparation of oxalic ...d citric acid by fermentation, the ...nufacture of benzaldehyde and benzoic ...d, the cheap production of alcohol, ...nut oil, the destructive distillation of ...dwoods, re-cracking cracked oil, etc., ...re discussed by this division, which ...t at room 305, Schermerhorn Hall. Ab...cts of some of the papers of interest ...the Reporter's trades are given here...h:—

...e Recracking of a Cracked Oil.

...STAV EGLOFF and THOMAS J. TWOMEY.

...e purpose of this paper was to report the ...lts obtained by subjecting the residue oil ...e 170 deg. C., which had already been ...cked, to conditions of temperature and ...ssure, to determine the per cent. of ben..., toluene, xylene, naphthaline and anthra... obtainable from the cracked oil.

Summary.

...der identical conditions the cracking of a ...oleum oil and a cracked oil derived from this petroleum oil gave results from which the following conclusions may be drawn:—

1. The cracked oil does not decompose to the same extent as does the petroleum oil.
2. The cracked oil is not so well adapted for either aromatic or gasoline production as is the petroleum oil.
3. Whatever cracking takes place to lower boiling hydrocarbons from a cracked oil may be attributed to a large extent to the unchanged petroleum in the cracked oil and not to its aromatic constituents.
4. There is a limit to the number of times which an oil can be recracked, because the tendency of the reaction is to form aromatic compounds, which decompose neither to gasoline or to members of the benzine series appreciably, but toward the ultimate products, carbon and hydrogen.

Problem of the Cheap Production of Alcohol.

In discussing this question, Arthur N. Beckler said there were two uses to which alcohol could be put. One is as a raw material in the industries, and the other as a fuel. The largest uses of alcohol at the present time are in the hat and tobacco industry, and, in 1915, a demand sprung up from munition manufacturers. The big future of alcohol must be as a motor fuel, and for the important purposes it must be produced at a price not higher than 10 cents per gallon, to compete with gasoline at the present time. It cannot be produced cheap enough from grain to compete with gasoline, and molasses is rapidly becoming too high to produce it from black strap, a by-product of the molasses industry. It must be made from some new source, and the plant must be located where deep water supply is available.

The problem presents great possibilities, but extremely efficient management is necessary.

The present cost of producing alcohol from grain, corn, etc., is about 15 cents per gallon, and a gallon cost averages about 20 cents per gallon. The present production is about 5 per cent of the estimated gasoline consumption.

Alcohol has been produced from wood waste, and many experiments tried along this line during the last few years and plants have been in operation, but no great degree of success has so far been met with. Alcohol has also been produced from the sulphite waste of the paper industry, and this field also offers possibilities.

Authentic reports have been received that alcohol is being used in Cuba at the present time for generating power. The best grade of alcohol gives about the same power, gallon per gallon, as gasoline.

DR. BERNARD C. HESSE,

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Chairman Special Committee, American Chemical Society, and Prominent Aniline Color Expert.

The Formation of Aromatic Hydrocarbons from the Thermal and Pressure Decomposition of Pentanes and Hexanes.

By GUSTAVE EGLOFF.

The effect of temperature and pressure upon a mixture of pentanes and hexanes in the formation of benzine, Toluene, xylene, naphthaline and anthracine has been studied. The following headings and tables give the analytical results of the investigation:—

Table 1.

The Effect of Pressure on the Per Cent of Recovered Oil, on the Gas Formation, on the Carbon Formation and the Specific Gravity of the Recovered Oil at Temperatures 450 deg., 500 deg. and 650 deg.

Temperature Deg. C.	450		500		650	
Pressure in atmospheres—	1	12	1	12	1	12
Per cent. of recovered oil	72.0	49.0	45.1	14.0	6.7	0.0
Specific gravity	00.772	0.778	0.780	0.790	0.901	...
Per cent. carbon	0.8	0.6	10.0	2.6	15.0	30.0

Table 2.

The Effect of Pressure on the Formation of Benzine, Toluene, Xylene, Naphthaline and Anthracine in the Recovered Oil at Temperatures 450 deg., 500 deg. and 650 deg.

Temperature Deg. C.	450		500		650	
Pressure in atmospheres—	1	12	1	12	1	12
Per cent. benzine	2.0	6.5	2.9	13.8	15.1	0.0
Per cent. toluene	6.9	4.2	6.4	5.0	5.9	0.0
Per cent. xylene	8.2	5.8	6.1	2.4	6.0	0.0
Per cent. naphthaline	2.1	2.8	3.8	4.8	5.6	0.0
Per cent. anthracite	0.8	1.9	2.8	4.0	4.2	0.0

Table 3.

The Effect of Pressure on the Formation of Benzine, Toluene, Xylene, Naphthaline and Anthracine on the Basis of oil Used at Temperatures 450 deg., 500 deg. and 650 deg.

Temperature Deg. C.	450		500		650	
Pressure in atmospheres—	1	12	1	12	1	12
Per cent. benzine	1.4	3.2	1.3	1.9	1.0	0.0
Per cent. toluene	5.0	2.1	2.9	0.7	0.4	0.0
Per cent. xylene	5.9	2.7	2.8	0.3	0.3	0.0
Per cent. naphthaline	1.5	1.4	1.7	0.7	0.4	0.0
Per cent. anthracine	0.6	0.9	1.2	0.6	0.3	0.0

A theoretical discussion as to the formation of the aromatics is given in the original paper.

Teaseed Oil: Properties, Tests and Possibilities.

By CHARLES V. BACON.

Teaseed oil, obtained from the teaseed plant, Camellia theifera, and imported into this country, is an oil having a yellowish brown color, being faintly cloudy, and having a characteristic and decided odor that may generally be termed "haminess." This peculiar odor is occasioned by the fact that the seeds are in all probability dried over a wood fire, and the smoke coming in contact with them imparts the odor of smoked ham.

The oil in practically all respects, in both physical and chemical tests, resembles commercial olive oil, such as is used for industrial purposes in the manufacture of soap and in the textile industry. If this industry were properly fostered it would readily give a vegetable oil that would alleviate the wide fluctuation of olive oil.

Refined teaseed oil, made by removing the free fatty acids with caustic soda, then bleaching the oil with fuller's earth and a sprinkling of bone black, makes an oil suitable for use in the manufacture of sanctuary or signal oil or burning purposes, and in all respects may be considered a favorable substitute for rapeseed, olive and lard oils.

This oil does not compete with any of the oils manufactured in this country. It ranks with olive oil and must be considered substantially as such. It is different from cottonseed, corn and sesame oils, in such as it is a non-drying oil and is not subject to oxidation changes, and this makes it a very suitable oil for use in the textile industries. A desirable feature over that of olive oil is that teaseed oil has a better cold test, remaining liquid even below zero, F., meaning that the oil may be transported during cold weather and the barrels dumped without first placing them in a hot room to thaw out.

Under our present tariff tea oil is duitable at the rate of 15 per cent. ad valorem. It is my firm belief that tea oil should be permitted at the present time to enter this country without any additional tax, as olive oil for manufacturing purposes now does, especially when one considers the present shortage and the probable shortage in the future of olive oil, which is only a productive crop when the trees are properly and carefully cultivated and looked after.

At present we are drawing the bulk of our supply of olive oil from Spain. Much of the oil produced in Italy and France is at present being used by the said countries for their own consumption owing to the extraordinary conditions occasioned by the war.

Unfortunately there is not much published data on teaseed oil, and what there is must be considered with reserve. I have taken pains to have the source of my samples investigated and have every reason to believe the oil has been expressed from the ordinary teaseed plant, "Camellia theifera."

Organic Division.

The papers presented before the Division of Organic Chemistry at Earl Hall were all technical in the extreme, as the following abstracts will indicate:—

Determination of Small Amounts of Nitrogen, and Its Presence in Petroleum.

By CHARLES F. MABERY.

The question as to the presence of nitrogen derivatives of the hydrocarbons in all varieties of petroleum has an important bearing on its origin. That it is contained in most of the heavier varieties, and in some in considerable quantities, has been shown in this laboratory.

During the last three years much attention has been devoted to an examination of typical varieties of the Appalachian fields, Pennsylvania, West Virginia and the lighter Berea grit of Southern Ohio. Nitrogen appears to be present in all these varieties, but in some specimens in minute proportions.

On account of the extreme difficulty in removing the last traces of atmospheric nitrogen, a special method of analysis had to be devised. In burning the large amount of oil—a gram or more—the large excess of CO_2 it is extremely difficult to burn completely the hydrocarbons. Therefore, the oil was burned in a boat in front of an oxidized roll of copper gauze, and behind this a boat with potassium chlorate for oxygen, all in a glass tube filled in front with copper oxide, and attached to the rear another shorter tube for $MgCO_3$. A steel tube filled with CuO is connected in front to the glass tube, and heated to the full capacity of another furnace. But after all precautions in removing by vacuum and heat and occluded and adsorbed gas from the CuO and apparatus, minute amounts of gas collected in the nitrometer.

After finding that the different varieties of magnesite contain nitrogenous organic matter that can be removed only with the greatest care below the temperature at which CO_2 is evolved, it was found, after its removal, that unabsorbable gas still appeared, but that this could be reduced to an amount of 0.1 cc. per hour running at the rate of 200 cc. of CO_2. This introduced a constant correction in all the analyses.

Less satisfactory results were obtained by generating CO_2 with acid from the carbonates, traces of nitrogen still appearing even after prolonged action. Since it has been found that this correction may be materially reduced by sweeping out the apparatus with a large flow of CO_2 from an independent source, followed by pure CO_2 from $MnCO_3$ or $MgCO_3$, attempts are now being made to remove entirely the slight film of air that clings so persistently to the apparatus.

Water, Sewage and Sanitation.

Sanitation, sterilization of water in rivers and pools, determination of content of sewage, micro-organisms, etc., were included in the list of 17 papers prepared for consideration at the Havemeyer Hall

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session of the Water, Sewage and Sanitation Division. The following abstract of the paper of F. L. Rector, which was illustrated with lantern slides, will be found of interest:—

Present Status of the Mineral Water Industry.

By FRANK L. RECTOR.

The mineral water industry is a product of the last generation, and was established to meet the need of a safe water when the public supply was polluted or unsightly.

Reputable firms engaged in this work exercise every precaution in handling the product from sources to consumer. Scientific control of methods obtains in many cases. Sources are protected by owning or leasing adjacent property.

The industry may be divided into five general classes. 1. Waters, for home and office use, selling at a moderate price; 2. waters, ususlly carbonated, used in clubs, hotels, etc.; 3. waters used for medicinal purposes; 4. waters fortified so as to give them medicinal value; 5. waters erroneously claiming medicinal value due to the presence of some therapeutic agent in small amounts.

In 1914, eight hundred and twenty-nine springs reported sales of over 54,000,000 gallons, having a value of almost $5,000,000.

This industry has a legitimate field for development in co-operation with those forces tending toward sanitary betterment of the community. Its influence is constructive and the worthy elements of the industry merit the co-operation of those interested in seeing the application of sanitary efforts to lines of commercial activity bear fruit.

In the modern treatment of sewage air is run through it until it divides into a precipitate called sludge, and a liquid called the effluent. Dr. H. W. Clark, in his paper on "Treatment of Sewage Sludge With Filter Effluent," showed how the offensive nature of the sludge, which is of high fertilizer value, may be removed, according to work done at the Lawrence Experiment Station. Great tanks are provided to run on eight-week shifts. Sludge is put in daily, and to this is added two and one-half times the volume of effluent. By this treatment fatty matters in the sludge are reduced about 50 per cent. While the organic nitrogen, needed for fertilizer, remains constant and the sludge is rendered stable and entirely unoffensive. No offensive odors come from the operation of the tank.

The effluent used is clear, low in nitrates, and is in many instances less objectionable in streams, into which it is run, than the unused, highly nitrified effluent, in view of the occasional promotion of the growth of organisms by nitrates.

Fertilizer Chemistry.

Among other things discussed at the session of the Division of Fertilizer Chemistry, which met at Rumford Hall, Chemists' Club, was the utilization of city waste for the manufacture of fertilizer, by Prof. J. W. Turrentine of Wesleyan; tankage, the potash situation, preparation of concentrated fertilizers, commercial wood analyses, etc. Abstracts of several of the papers are given herewith:—

J. W. Turrentine discussed the "Utilization of City Waste for the Manufacture of Fertilizers," treating of the various sorts of city wastes which carry elements of fertilizer value; the prices obtainable for these; their present disposition and costs appertaining thereto; quantities produced and new methods of rendering introduced and proposed.

"Variation in the Composition of City Garbage" was the thesis of W. J. O'Brien and John R. Lindemuth. The analysis of 75 samples of garbage taken at regular intervals throughout a year showed that there was an unimportant seasonal variation in the moisture content, the maximum falling in July and the minimum in April. This seems to be a product of a seasonal change both in diet and rainfall. It fails to show that it is of sufficient magnitude seriously to effect the commercial success of a garbage rendering plant.

The analysis of 128 samples of garbage taken from sixteen sections, of known characteristics, of the city, through a range of time of four or five months, failed to show any marked or consistent variation. The conclusion is indicated that the kitchen refuse from the establishments of the various classes of inhabitants is essentially alike in content of fats and the elements of fertilizer value. This is without regard to relative quantities. Its importance lies in the fact that it tends to refute the prevalent opinion that the garbage of certain cities can not be rendered profitably because of the nature of its inhabitants.

"The Availability of Nitrogen in Garbage Tankage" was discussed by James F. Schroeder, who said that various approved methods have been applied to the determination of the availability of the nitrogen of garbage tankage, in each case a comparison being made with an ammoniate of recognized availability. Tankages of various sources and prepared by the various rendering methods have been examined. The results show that the present discrimination against garbage tankage probably is unwarranted.

POTASH SITUATION.

Under the title of "A Summary of the Potash Situation," Prof. H. A. Huston said that the matter could be summed up very briefly. No German potash has come into the country from Germany this year, though some has been received from other countries.

Due to the shortage, a few minor waste materials, which have always been sources of potash, have been better utilized than heretofore, e. g., tobacco stems, wood ashes, etc. As regards potash from new sources, he figured that about 45 tons of K_2O per day were being produced, which should be compared with the importation of about 745 tons of K_2O per day before the war. Figuring on a 365 day basis, we are thus producing about 6 per cent. of our former requirements.

Of the sources yielding this, namely, kelp, cement, alunite, and Nebraska Lake, the last was responsible for more than half of the total output.

Commenting on the present condtion of the potash industry in Germany, he said the mines were not full of water, as reported, but were operating regularly at somewhere near normal production.

In conclusion, he recited some original verses, closing with the following refrain:

"I'm coming, I'm coming,
My price is trending low;
I hear your hungry voices calling
K_2O."

ELECTRIC STEELS AND ALLOY STEELS.

A conference on "Electric Steels and Alloy Steels" was held at the Grand Central Palace Conference Hall at 2 p.m. The hall was crowded to capacity.

Dr. John A. Mathews, of Syracuse, presided at the meeting. Discussion of the electric furnace as used in the manufacture of alloy steels brought out many interesting things. Dr. Mathews compared the ancient and modern methods of iron and steel manufacture, emphasizing his remarks with a series of lantern slides. He pointed out that the modern process differed very little from that of the sixteenth century, the development of the industry having been almost entirely in machinery for handling the metal. The electric furnace is the most modern type of machine for the production of high speed tool steel, and is being operated with considerable success by many manufacturers.

Another interesting thing brought out by Dr. Mathews was the fact that roller bearings were known and used as early as 1772, when an Englishman used the principle on a two-wheeled cart, and tried to convince the English people that an enormous economic saving could be made if it were adopted for general use on all agricultural vehicles.

Discussing the electric process, Dr. Richards said that he thought the most efficient and satisfactory process for manufacturing alloy steels would in the future prove to be a combination of the Bessemer, open hearth, and electric furnace, the steel being treated in each in the order mentioned. This is known as the triplex system. It developed later that the Illinois Steel Company at Detroit has already installed a fifteen-ton triplex system, and has under construction two other units of the same type, having a capacity of twenty tons each.

The question of power costs for electric furnaces took up considerable time. Dr. Morgan Smith, of the Detroit Edison Company, said that it was the ambition of the company to produce with steam plants electric power at such a low cost that it could not only compete with water power current, but could undersell it. He intimated that the time would not be far in the future when this ambition would be realized.

A representative of the Lackawanna Steel Company said that his company had already done a great deal of experimental work on steel for governmental uses, and that they would continue these experiments in order that in case of war they might be of all possible assistance. He said that this line of alloy steels was of great importance to the country, and should have the attention of the steel men.

In a general discussion of tool steel alloys, the consensus of opinion was that chromium, vanadium, and tungsten steel alloys are the most satisfactory. Uranium, at $7 per pound, does not seem attractive, and steel alloys made with it do not stand the tests.

From the technical standpoint, the conference was of great value. Many intricate technical details were threshed out and experiences of practical men exchanged.

FOURTH DAY.

Technical Papers and Discussion Take Up the Time of Delegates.

It was no place for the layman at any one of the several symposiums and divisional meetings of the American Chemical Society on Thursday, for the majority of the papers presented were abstruse in the extreme. There were continuations from the previous day of the symposium on colloids by the biochemical, physical and inorganic and industrial divisions, industrial conferences at the Grand Central Palace and at Rumford Hall, the first on American-made chemical glass and porcelain, with Arthur H. Thomas presiding, and the second on industrial alcohol, acetone and acetic acid, with Arthur D. Little presiding. The feature of the evening was a "smoker" of the Electrochemical Society at Rumford Hall, to which members of the American Chemical Society were invited.

AT THE COLLOID SYMPOSIUM.

Refining of oil, paints, vulcanization of rubber, asphalt, plaster of paris, colloids in glass, fritting and fusing, etc., were among the topics discussed by the chemists at the Colloid Symposium, abstracts of several of the papers being as follows:—

In the colloid chemistry meeting Colin G. Fink read a paper on "The Relation Between Chemical Composition and Electrical Conductivity," which told of a very interesting experiment. He made rods of equal weights of mixed powdered tungsten and powdered thoria. Then he conducted currents of electricity through them and measured the resistance.

Now tungsten is more a conducting medium than thoria and as, in his repeated experiments, he made the particles of tungsten finer than those of thoria the conductivity increased. When he made the particles of thoria finer than those of tungsten, the resistance increased.

In other words, it appears that electrical conductivity, like chemical energy, increases as the particles are more finely divided.

The underlying principle finds practical application in the preparation of cold charges for granular resistor furnaces.

Purification of American Kaolin.

By DR. CHARLES L. PARSONS, Chief Chemist of the U. S. Bureau of Mines.

A paper was presented in the Applied Colloid Chemistry Symposium upon "The Purification of American Kaolins" as conducted by the Bureau of Mines. It has long been known that immense quantities of secondary kaolin were to be had in South Carolina and Georgia, but it is also known that this kaolin, although white enough for the paper trade, was of no value to the pottery trade, owing to the fact that it carried certain impurities, notably titanium and iron oxide, which gave color to white ware.

In a study carried on in the laboratories of the Bureau of Mines, it was found that a small amount of sodium hydroxid deflocula ed the kaolin colloids so that the clay readily remained in suspension in water through long periods of time, allowing the small particles of heavier minerals to be readily settled out. As a result, co-operative experiments were conducted with the Georgia Kaolin Company, near Macon, Ga., and a plant built for purifying kaolin in accordance with the facts discovered in the laboratory. As a result, many tons of kaolin were purified at an almost nominal cost. The pure china clay so produced was investigated by one of the bureau's experts in two large potteries in the State of Ohio, and it has been definitely shown that these kaolins, at a cost of a few cents a ton, can be converted from a material selling for $4.50 a ton to a material easily marketable at twice this figure.

Furthermore, white tile made from this kaolin, mixed with American feldspar in proper proportions, has been produced of a greater degree of whiteness and a greater breaking strength than the best tile previously produced from English china clay and Cornwall stone. The purified kaolin has also been found to be applicable to white china ware, thus replacing a large part of the English china clay. America should, accordingly, be entirely independent of the importation of foreign material for the white ware industry.

The sections devoted to Water, Sewage, Sanitation and Rubber were also busily engaged during the day.

Refining Oils.

By CHAS. BASKERVILLE.

Animal and vegetable oils extracted from selected and perfectly clean parts are usually neutral and "sweet." Commercial exigencies result in the actual production of oils usually acid and always contaminated. It is therefore necessary to refine the oils, especially if they are to be used for edible purposes. The kinds of impurities, various but classifiable, and the favorable conditions for their production and development are given to show the principles to be considered in dealing with the problems of refining.

The impurities are, roughly stated, (1) acid in character, (2) albuminoids, (3) gums, (4) coloring matters, (5) metallic soaps, etc. The character of the crude oil depends upon not only the kind and part of the vegetable (wood, nut, seed, etc.), and animal (fish, whale, liver, etc.), used, but the quality of the raw material at the time of expressage or extraction (rusting, rotting, fermentation, sprouting, heating, etc.), the method followed, the care exercised in the process, and the conditions to which the oil is subjected prior to its refining.

The general methods developed during the past 125 years are explained. These methods usually involved more or less chemical treatment with heat and sedimentation. The latter is always time consuming and the sediment carries with it more or less of the desired refined oil. Also the oil remaining above the sediment acts as a solvent or menstruum for coloring matter and colloidal material.

The problem was to coagulate the sediment in such a manner that it might be filtered out shortly after being produced, and thus remove not only the colloids, but much adsorbed coloring matter, and then squeeze the mass, thereby increasing the yield of refined oil.

The problem was solved, after many thousands of trials, by adding an organic absorbent (cellulose in various forms) along with a suitable amount of caustic alkali solution, heating to the "break," and then adding a dehydrating agent (soda ash or salt cake) which would and does agglomerate the small particles and dehydrate the soap, followed by filtering while hot. The oil flows from the filter brilliant and neutral.

While the shrinkage in the process of refining usually follows the percentage of free fatty acid in the crude oil, this is not always the case. Oils very high in acid frequently do not yield to the older processes for refining, but in every case such oils have been successfully refined by the method here given.

The process, covered by patents in this and other countries, yield from 1 to 10 per cent. more refined oil than the older processes. The cottonseed oil industry alone in this country in normal times may be saved $2 000,000 annually by the process. The soya bean oil industry, just developing in this country, can save 5 per cent. The peanut oil industry can save 6 per cent., and the cocoanut oil industry from 3 to 5 per cent. The codliver oil industry shows from 9 to 16 per cent. saving.

The process takes from one-tenth to one-third the time now necessary, hence less machinery and outlay. The cost of chemicals is the same or less than the old methods.

The by-product may be converted directly into a useful and commercial material.

While not applicable to castor oil, China wood oil, and "aged" linseed oil, all other vegetable and animal oils, so far investigated, yield to the process which is now in commercial operation.

Paints.

By T. R. BRIGGS, Of Cornell University.

The properties of pigments are influenced fundamentally by the degree of subdivision of the particles. For the special case of a mixture of two pigments of different colors, the tinting power of one pigment in the mixture is dependent chiefly upon the relative size of the particles. If one pigment is relatively fine and the other coarse, and if the finer particles coat over the surface of the coarser ones, the color or the mixture is the color of the finely ground pigment. The theory leads to an understanding of the use of inert pigments as diluents.

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American Chemically Made Glassware and Porcelain.

The meeting held at the Grand Central Palace on Thursday afternoon at 2.30 was presided over by Arthur H. Thomas. The first man to discuss the topic was Dr. Frease, of Columbia University, on the subject of the "Decreased Supply of Glassware" and how all the manufacturers of this country had met the requirement. He then spoke about the conditions at the close of the war when the universities would be confronted with the question of having to choose between American protected glassware and the duty free foreign glassware, and he thought that the proper solution of the problem would be a law whereby the government should cover the difference. He also mentioned the fact that the most needed requirements of this country were in the microscope industry, for the reason that, under war conditions, the armies and navies would require sights for guns, and that manufacturers of microscopes would be apt to turn their plants along this line.

The next speaker on the program was E. P. Sullivan, of Corning Glass Works, who said that if the manufacturers of this country are given sufficient time, there is no doubt that they will be able to compete with the manufacturers of Germany.

Prof. Smith, of the Case School of Applied Science, was the next speaker and made the suggestion that State laws be changed, so that State schools should buy their glassware from the lowest American bidder, not the lowest bidder as regards to cost, as now required.

A. B. Davis, of Eli Lilly Company, Indianapolis, finds that laboratory glassware is very easy to blow, and showed a number of very interesting pieces which were made in his own laboratory.

Glasses of Special Spectral Absorption.

W. C. TAYLOR.

Several glasses have recently been developed which are of interest because of their special spectral absorption and transmission. Among these are:—

High transmission red, which absorbs all the visible spectrum except red, and of this it transmits 85 per cent., as against 90 per cent. for clear glass. This glass should prove valuable not only for signal purposes, but also as a color filter in photography. (Samples and slides.)

High transmission yellow, which has 30 per cent. greater transmission than ordinary yellow of the same hue and a much better absorption curve. The new color is a more saturated color than the old, having 50 per cent. greater transmission for the same amount of yellow. (Samples and slides.)

High transmission green, which absorbs all the red and some blue, transmits all the green and has a 50 per cent. better transmission than the old signal green of the same hue. (Samples and slides.)

Noviol glass, a bright lemon yellow, which completely absorbs all the ultraviolet and in the dark shades all the violet and blue as well. This glass is made in several shades, the amount of color depending largely on the heat treatment. This glass, besides being valuable as a color filter, is especially useful as a spectacle glass. For this purpose it is used in two shades—light and medium. The light shade is very difficult to obtain and requires special heat treatment to obtain the very pale color, and at the same time get complete ultraviolet absorption. This glass, however, is, because of its light tint, very desirable for spectacles to take the place of clear glass where ultraviolet absorption is desired. Much discussion has taken place recently on the harmful effects of ultraviolet rays on the eye, and there seems to be a considerable demand for glasses that absorb the ultraviolet, and at the same time are free enough from color so as not to attract attention to the wearer or dim the vision.

There is also a demand for glasses that have still greater absorption of the violet end of the spectrum. For auto goggles and shooting glasses a slight absorption of light is not undesirable when accompanied by the benefits of ultraviolet and violet absorption. The medium shade noviol is ideal for shooting. It has been stated that in the twilight the game (almost invisible against a bluish or green background) stands out conspicuously with these glasses, so that by using the larger aperture sight a shot is easy long after the mark would be discernible with the naked eye. With it bull's-eyes stand out finely on a cloudy day, and for electric light shooting it is almost a necessity. We have been able to manufacture some quantity of both these shades of perfect optical quality, though there have been so many difficulties in getting the glass free from irregularities in coloring, true to shade and free from striae and bubbles, that it is extremely expensive to produce. Samples tested by an eminent authority were reported as absorbing 31.0 degrees heat rays in all shades and ultraviolet .4750 in dark shade, .4525 in medium, and .4200 in the light shade.

Noviweld glass, which is used for welders' goggles, is a greenish yellow glass which absorbs considerable ultraviolet and infrared, and also cuts down the general intensity of the light. It is a pleasing shade for use where protection is desired against excessive illumination.

Blue purple ultra glass, which transmits the extreme red, blue and ultraviolet, and absorbs all the rest of the visible spectrum. This is used by some chemical manufacturers as a light filter.

Daylite glass, which is a blue glass having such a spectral absorption that when used with the nitrogen filled tungsten lamp, the spectrum curve of daylight is very closely approximated.

FIFTH DAY.

Symposium on Occupational Diseases in Chemical Trades Principal Feature.

The general program for Friday included a symposium on occupational diseases in chemical trades at Columbia University, with Professor Charles Baskerville as chairman. The addresses were all in relation to the subject chosen for the day's discussion.

Dr. J. W. Schereschewsky, surgeon in the United States Marine Hospital Service, cited a number of chemicals dangerous to workers in the industry, notably to unskilled workers, naming antimony, lead, quicklime, sulphur, white sulphur and coal-tar products. He stated that in Germany, where industrial safety has been a matter of profound study for years, the number of days lost per year per man was eight and a half. But 12 workers in the entire German chemical industries without illness.

Papers by Prof. Baskerville, George E. Adamson, Dr. Alice Hamilton, Dr. W. A. Lynott and H. K. Benson were read, and there was a discussion by prominent members of the society. Abstracts of the more important papers will be found herewith:—

Aniline and Other Coal-Tar Products.

By GEORGE P. ADAMSON.

"Aniline pip" is the term popularly used to designate a malady which sometimes afflicts workmen engaged in the production of aniline, the all-important intermediate for dyestuff manufacture. The preventives are:—Vinegar baths, wooden-soled shoes and scrupulous personal cleanliness.

The tremendous increase in the production of aniline and the opening of many new establishments for its manufacture have led to careful observation and regard of the symptoms of aniline poisoning observed among the workmen in the plant of Mr. Adamson's company.

The symptoms of aniline poisoning have not been generally recognized by physicians. Poisoning is due, in most cases, to absorption by contact. As a rule, inhalation of aniline fumes is not injurious, nor are the effects of poisoning cumulative. The usual symptoms of the poisoning, except in acute cases, are skin eruption, headaches, blueing of the gums and lips, pallor and general physical depression.

A number of severe cases of poisoning, due to absorption of aniline, were traced to shoes with thin or imperfect soles. Wooden-soled shoes are now worn by the workmen. Absolute cleanliness is insisted upon, and the men are required to bathe before leaving the works. When there is accidental contact of aniline with the body, the skin should be washed with dilute acetic acid, and the man's clothes subjected to a similar treatment. For internal dosage, Rochelle salts are found very efficacious.

A number of cases of aniline poisoning were cited. Blood tests were made on thirteen cases. Ordinarily, there is a reduction in the hemoglobins and in the amount of red corpuscles. As a result of these tests, it is considered advisable that blood tests should be made on all suspicious cases, although the men ordinarily are frightened at the idea of this test. Men whose blood shows lower than 85 per cent. hemoglobins should not be employed in aniline manufacture. In almost all cases the recovery from severe poisoning due to excessive absorption of aniline was a quick recovery and without after effects.

Nitrophenol, amidophenol and other coal-tar intermediates, cause affections similar to aniline. Blonds are more susceptible than men of swarthy hue to these affections.

Mr. Adamson concluded his paper with reports from Dr. Lyons, of the Benzol Products Company, and Dr. Hudson, of the Dupont Company. Dr. Lyons reported a severe case of aniline poisoning. A workman engaged in cleaning a floor where some aniline oil had been spilled, was overcome by the fumes, and lay for several hours in contact with the oil before he was found. At this time he was almost unconscious, and his clothes were completely saturated with aniline. Vigorous oxygen treatment for twenty-four hours was resorted to, and at the end of two weeks the man had completely recovered. Dr. Lyons reports that nitrobenzol poisoning exhibits symptoms similar to aniline poisoning, but recovery is more slow.

Bureau of Mines Studies in Occupational Diseases.

By DR. W. A. LYNOTT,
Bureau of Mines, Washington.

The need of the conservation of health is shown in the fact that among 30,000,000 workers in this country each one experiences nine days' idleness due to illness. This makes a loss of 270,000,000 working days, or about 750,000 working years annually. If a day's work is figured at $2 and a doctor's attention at a dollar, then this cost of $3 per day would make the annual expense of illness among the workers of the United States $810,000,000. Investigations in the Joplin district of Missouri among zinc miners brought out the fact that the inhalation of particles of flinty dust among the miners causes them to be receptive to tuberculosis and pulmonary troubles. On the other hand, tuberculosis is found to be very rare among coal miners, although it frequently prevails among the families of the miners

DR. CHARLES BASKERVILLE,

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Professor of Chemistry College of the City of New York, Contributor to Colloid Chemistry Division.

The symposium was continued in the afternoon with papers by Prof. Baskerville and Ivan Narodny, abstracts of which follow:—

Occupational Diseases in the Chemical Trades.

By CHAS. BASKERVILLE.

Chairman of the Committee on Occupational Diseases in the Chemical Trades.

An International Congress, dealing with the subject of industrial diseases, was held at Brussels in 1910. The first congress took place in 1906 in Milan, and since then an institution has been established there devoted to the study of diseases of occupation and to matters of industrial hygiene. Previously museums of safety had been established in Berlin (1904) and Vienna (1906).

The Brussels Congress was attended by over 600 delegates, and approximately 20 per cent. of the papers presented were by medical men of Great Britain, where the subject has received attention for a number of years, both by the Factory Department of the Home Office and by the Association of Certifying Factory Surgeons.

A Committee on Occupational Diseases in the Chemical Trades was appointed by the New York Section of the American Chemical Society in February, 1912. Some of the reasons for the existence of the committee appear in the statement of its objects, which were specifically:—

1. To hold itself ready to advise the Legislature of the State of New York in reference to matters appertaining to occupational diseases in the chemical trades;

2. To study various bills presented in the Legislature in an effort to avoid unwise technical legislation;

3. To superintend and inaugurate such investigations as might be decided upon which would look toward improvement of conditions of labor in the chemical trades.

Two members of that committee served the New York State Factory Investigating Commission and assisted in formulating the present laws having to do with inorganic chemicals, ventilation and the regulation of the use of wood alcohol.

Subsequently the parent society appointed the present committee, whose personnel has changed but little since its creation. The objects of this committee have been to extend the intent and purpose of the Sectional Committee in so far as legislaion was concerned. It was and still is the hope of the committee to secure sane and uniform legislation in all the States. This accomplishment, however, requires time and patience, which are essential for bringing about things in a republic, where so many States of different interests, different modes of thoughts, etc., constitute the whole.

Another purpose of the committee has been to learn of specific conditions in particular chemical trades which might call for improvement. To that end its members in the several parts of America represented have sought information, solicited and offered advice. It has co-operated with boards of health and private corporations. Its work, however, has not been systematic or in accordance with any well-defined plan, for the simple reason that no funds have been available to meet the expenses of investigation, adequate clerical force for propaganda, etc. The work requires financial support to be properly organized.

Informally the committee has learned that some manufacturers are doing much toward the protection of their labor, while others are absolutely inconsiderate. The former are governed by motives altruistic, an appreciation of the efficiency of a healthy workman, and they are frequently supported by laws covering the employment of labor in factories. They are often handicapped, however, by unwillingness on the part of labor to utilize the precautionary facilities placed at hand.

The other group of manufacturers, fortunately relatively few in numbers, are selfishly inhuman in some instances and going their way lawlessly or more often in blind ignorance, for the untoward action of some chemicals is slow and insidious. In fact, one of the important questions in connection with industrial diseases is, "Is it possible to draw a distinction between maladies which are the result of certain occupations and accidents?" This is of great significance in connection with the "Workmen's Compensation Act" of England, and of the same importance in the relations between "master and servant" in this country. It is, indeed, difficult in many cases to ascertain whether a disease is the direct result of the nature of employment; but the justness of the principle of compensation for so-called industrial diseases is generally accepted, and the method of procedure by the aid of a schedule of diseases as adopted by the English law is regarded as a good example to follow. In the United States certain severe and clearly traceable diseases resulting from occupational causes have had recognition, and active campaigns against such industrial maladies as plumbism and phosphorus poisoning have resulted in specific legislation.

Workmen's compensation laws have been enacted in about one-third of the States of the Union and there is hope that a Federal bill proposed may yet receive favorable action. The various State factory laws are, for the most part, however, concerned with minimizing fire risks and obviating accidents to workmen engaged in purely mechanical operations.

Even though two excellent books on occupational diseases written in this country wholly or in part by some of the participants in this symposium have come from the press within the past two years, yet, as reverted to above, the action of some chemicals is insidious and not always known. It is of prime importance, therefore, that the introduction of any novel substance into industrial operations or the introduction of a novel procedure (electrolytic zinc at Anaconda, for example) should be studied to detect possible danger at an early stage so that due precautions may be taken. Usually trouble is recognized only after its results have become more or less pronounced. It gets before a board of health and at once there is friction with the manufacturer, who naturally resents interference.

Investigations on general industrial hazards should be carried on by the State, but only with co-operation of the manufacturers. Of the latter I am well assured. A form of benign paternalism, inevitable and to be desired in a safe republican form of government, would be welcomed by chemical manufacturers, but they resent wild legislation not founded upon technical and scientific investigation. It is therefore urged that there be a greater extension of the work on these lines by the Public Health Service in Washington, the Bureau of Mines and the Department of Labor, as well as the several States. But the work requires co-ordination. It is the opinion of the chairman of this commitee that a museum of safety should be established in Washington, where the several governmental (national, State and municipal) officials and representatives of selected lines of chemical activity might co-operate by conferences and advice. The proposed museum should perform not only an educational function, but investigate new as well as old conditions, and if need be volunteer advice to legislative bodies.

It is a fond hallucination of many to plan out something for the government to support when its underwriting seems unlikely in other directions. A Department of Public Health may yet be established and the proposed museum would naturally come within its scope.

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The Russian Chemical Industry.

By IVAN NARODNY.

In one sense, Russian chemical industry is only twenty years old; in another, it existed in its trade with the Orient when Northern Europe was plunged in barbarism. Russia is a world by itself, and is as different from other nations in business as she is artistically, socially and politically. For many centuries Russian merchants were the only medium between the Oriental and Occidental markets.

The statistics of chemical industry are misleading because mineral oil, cement, soap, explosives, starch and many other products are not classed as chemical wares. Many oils, roots, barks, extracts, etc., were heretofore sold by Germans, although made in Russia, and were marketed as German products. Until the war, the Germans practically controlled a good part of Russian chemical trades, and they controlled all Russian imports. Only the big wholesale drug and chemical honors were in the hands of Russians.

In 1913, the Russian chemical trade amounted to about 200,000,000 rubles, of which one-half was imported. Opium, essential oil, etc., were imported from Oriental countries without any control as the Russian frontier line with China is nearly 5,000 miles long.

Soda is the greatest chemical industry of Russia. In 1913, 400,000,000 pounds calcined, 150,000,000 pounds caustic soda and 20,000,000 pounds bicarbonate were produced. Lubimov, Solvay & Co. produced three-fourths of it. During the last two years Russia has exported a great deal of soda and will do more exporting in the future. In 1913 she produced 400,000,000 pounds sulphuric acid, 20,000,000 pounds metallic colors and 5,000,000 rubles' worth of bleaching substances. There were two nitric acid concerns which made aniline dyes in Riga, but their product reached less than 25 per cent. of the annual consumption. Russia consumes annually about 25,000,000 rubles' worth of dyes.

There is a large peasant textile industry of linen, wool, silk and camel's hair goods estimated at 150,000,000 rubles, and expensive brocades and ecclesiastical goods valued at 20,000,000, in all of which no modern dyes are used. They are made in the old-fashioned way from barks and roots in the villages, and are very attractive and enduring.

In standard medicines, which are used in large quantities, such as chloroform, bromides, morphine and the like, Russia nearly supplies her own needs. Drugs of recent origin were imported from Germany. Patent medicines are hardly known there. Apothecaries are under strict government supervision, and their establishments appear semi-official in character. Only approved medicines are sold. No side lines, such as sodawater, stationery, cigars, etc., dyes or even perfumes or cosmetics are carried.

Here is a country with 180,000,000 inhabitants, and it offers a great field to the chemical trade. Her stock of dyes and chemicals is exhausted, and if the United States and Canada are ready to grasp the opportunity of Russian drug and chemical trade right now, they can control it. Russian medical department is ready to furnish a list of what is most urgently needed.

Russia needs also surgical and clinical instruments, thermometers, rubber goods and hospital supplies. These formerly came chiefly from Germany.

One thing must be borne in mind in doing business with Russia. Russian wholesale dealers demand six months' credit against their bank acceptances. No one can change this system. If you do not give credit do not try to do business there. But this system is one of the safest in existence. The Russian merchants meet their obligations. The best is to deal through a responsible Russian commission house. It is a hopeless effort to send an agent who is not an experienced business man.

Who Prof. Baskerville Is.

Professor Charles Baskerville, who conducted the symposium on occupational diseases, is a leader in matters of general welfare. His daily occupation is the administration of the department of chemistry of the College of the City of New York, of which he is the head, and which now has 1,300 students. He is an authority on the chemistry of city problems and Baskerville's "Municipal Chemistry" is the standard book on the subject. With Prof. Winslow, he investigated the problem of ventilation of the city's public schools, improved conditions and at the same time avoided an expenditure of several million dollars by the city, which would have been of benefit to contractors but of no help at all to the children. His published work on air and steam pollution is frequently consulted. His brief on industries which produce noxious fumes, presented at the seventh international congress of applied chemistry in London, attracted wide attention. He investigated the wood alcohol situation for the New York Factory Investigating Committee and the present laws on the use of wood alcohol in the industries are based upon his findings. He is retained as chemical counsel by a number of large corporations and is also chemical adviser to a number of labor organizations. Through these connections he has been able, occasionally, to bring manufacturers and labor unions into harmony.

He has done pioneer work on minerals, especially among the rare earths; has discovered a new gem which he named gunzite, for his friend, Dr. George F. Kunz: has made exhaustive research into the bodies which cause anesthesia and the way to avoid danger; and has written, in collaboration with Dr. J. T. Gwathmey, the standard American work on it. He has also written, in whole or in part, half a dozen other chemical text books.

His latest achievements have been the refining of vegetable and animal oils by an entirely new method which constitutes the greatest contribution to that subject for the past two generations, and in conjunction with Dr. Hageman, he has developed a new process for hardening fats.

The "Manufacture of Paper Pulp and By-products," and "Medicinal Chemicals" were the subjects of conferences at the Grand Central Palace and at Chemists' Club. Robert B. Wolf presided at the former and Harold Hibbert at the latter.

Bureau of Mines' Studies of Occupational Diseases.

Paper Prepared for the Meeting of t he American Chemical Society, New York City, September 24, 1916, by the Permission of the Director of the Bur eau of Mines.

By DR. W. A. SYNOTT.

Early in the history of the Bureau of Mines, the subject of occupational diseases among miners and metallurgical workers came under consideration, the late director, Dr. Joseph A. Holmes, entered into a co-operation, continued by the present director, Van H. Manning, with the Public Health Service to investigate the prevalence of certain specific diseases among those engaged in the mining industry. Those studies were first undertaken among the miners to discover the prevalence of the hookworm disease and pulmonary troubles, more especially silicosis, and later were broadened to ascertain the extent of poisoning among blast furnace workers by carbon monoxide gas.

The foregoing efforts, and a preliminary research regarding the possibility of miners being affected by nystagmus ,as is the case among some coal miners in Europe, were conducted by special investigators, generally assisted by sanitary and mining engineers connected with the Bureau of Mines. While these special studies were being forwarded, general investigations have been made regarding the sanitation and prevalence of general diseases in mining camps and villages, and the effect of temperature and humidity on the health of miners has been noted by the surgeon connected with the mine rescue and first aid work, and by a sanitary engineer on the bureau's staff.

Dr. A. J. Lanza, of the Public Health Service, and Edwin Higgins, mining engineer of the Bureau of Mines, made an exhaustive study of pulmonary diseases and its relation to rock dust in the mines among the miners in the Joplin (Mo.) district in 1915.

It is known that inhalation of sharp particles of siliceous dust injures the mucous membranes of the lungs, bronchial tubes, etc., and in this way the lungs are in a receptive mood to pathologic conditions, especially to the germ of tuberculosis. This has been proven by investigations of morbidity among workmen in dusty trades and by study of the prevalence of lung diseases in the mines of South Africa and other foreign countries.

The report, as submitted by Dr. Lanza and Mr. Higgins, deals with sanitary conditons, more especially the prevalence of siliceous rock dust in the lead and zinc mines of the Joplin district and the bearing of these conditions on pulmonary diseases of the miners.

Records of Fatalities from Tuberculosis in Joplin District.

The records of the State Board of Health for the calendar year 1912 show 180 deaths from pulmonary tuberculosis in Jasper county, Mo., which represents a death rate of 200.8 per 100,000 population.

It seems to be the general opinion in Jasper county that lung diseases became more prevalent after the beginning of active mining in the sheet ground in the early eighties, and that the flint dust from drilling and other mine operations is largely responsible for this condition. The investigators concluded that when working conditions in any locality are such as to expose the workers to a hard, flinty, insoluble rock dust and when among those workers there is a high death rate from pulmonary tuberculosis, that there is a definite connection between the dust and the disease and that the dust is largely responsible for the disease; not entirely responsible for all pulmonary disease but a prime factor in its causation.

In this Joplin district a physical examination of 93 miners was made by Dr. Lanza; 64 showed plain and definite evidence of pulmonary disease, 3 were suffering from non-pulmonary disease, and 26 were seemingly well. Of the 64 sick men, 22 had stopped work on account of their health, the remaining 42 still being at work underground. Moreover, of these 64 men 39 had the classical symptoms of pulmonary tuberculosis. The physical signs of the other 25 were not such as to justify a diagnosis of tuberculosis on one examination—all of those 25 had noticeable dyspnea cough, etc.; 11 of the 25 showed evidence of lung injury, whereas, 14, in spite of marked subjected symptoms, presented no definite sign of tuberculosis on physical examination, their condition resembling rather sclerosis or miners' consumption.

Tuberculosis among coal miners is uncommon. The writer had occasion to visit a district in 1913 and 1914 where there were about 7,000 miners. While a physical examination was not suggester, the doctors in the various camps unhesitatingly said rarely, if ever, a case of tuberculosis was found among the miners. All told, not over 15 cases were admitted by the doctors. It was true that some members of the miner's family were affected, but the miners themselves seemed to have a certain immunity.

Many mine surgeons were under the impression that the coal or coal dust, in a measure, was responsible for this immunity.

So far as mine injuries are concerned, where open wounds are found and where coal dust, dirt, etc., have entered the wound, if removed under asceptic conditions, infection seldom follows unless germs are carried to the wound by fellow workers in an attempt to remove foreign particles.

Asthmatic Conditions Among Miners.

In the olden days many of the miners had miners' asthma, and it was thought to be due to coal dust inhalation. In recent years, however, asthma among miners is very rare and this improvement is due in a measure to better ventilation in the mines.

Effect on the men coming in contact with radium during the process of crystallisation.

Dr. R. B. Moore, physical chemist for the Bureau of Mines, has made an exhaustive study of uranium, radium and vanadium. In Bureau of Mines Bulletin 104 he reports that there has been no injurious effect of any kind attending this work. Practically all of the young men he examined have taken their turn at the work for two or three months each day and one of them worked for five months in the crystallizing room. No ill effects have resulted in any case, although the air in the room was, of course, quite radio active due to the emanations driven off from the solutions. Rubber gloves have been used to some extent in connection with crystallizing the richer fractions, but such gloves have not always been used. Under these conditions the alpha rays are all shut out and only a very moderate proportion of the beta rays reach the operator.

Brass Shakes.

Dr. H. W. Gillett, alloy chemist, of the Bureau of Mines, made an exhaustive study of "brass shakes," and I quote freely from his article on this subject found in United States Bureau of Mines Bulletin 75.

This disease is also known as "brass founders' ague" or "smelter chills." It is somewhat similar to malaria ague. There is no speific remedy. The symptoms are dry throat, feeling of lassitude, a hacking cough, a dull headache, a feeling of oppression in the chest, difficulty of thoracic breathing and sometimes a feeling of nausea. In a few hours, but usually not until the subject leaves the furnace in the evening so that perspiration ceases, a slightly chilly feeling occurs, which increases to a distinct rigor, the subject shaking violently. During the chill the actual temperature may rise to as high as 103 degrees F. The chill is accompanied by muscular pains. After a few hours the chills cease rather suddenly and a profuse perspiration sets in. The attack is then over and the patient sleeps profoundly, rising in the morning with only a slight feeling of weakness. Zinc is eliminated in the urine and feces and its presence is suspected in the perspiration also. Swelling of the spleen and albumin in the urine are also sometimes reported.

The theories as to the exact agent that causes the diseases are varied, the blame being variously laid on zinc oxide, metallic zinc, arsenic, cadmium, copper, a mixture of copper and zinc or carbon monoxide. Of these the most probable cause is zinc oxide, the main constituent of the fumes. It is unlikely that metallic zinc reaches the lungs unoxidized. No definite proof has been adduced to show that the minute traces of arsenic that may be present as an impurity are the cause. Cadmium being far more volatile than zinc, practically all the cadmium in the smelter is lost.

Some persons, especially those not indulging in alcoholic liquors, are naturally immune from the shakes; most others, if constantly breathing small amounts of zinc fumes, develop practical immunity and have the shakes only when they get an overdose of fumes, as when ventilation is poor or after a day of rest, when the system becomes freer of zinc. Monday night is the time when most cases of "shakes" occur, both because the Saturday night and Sunday indulgence in alcohol puts the system in such condition that the subject is more susceptible.

The shakes are inconvenient and unpleasant but seldom or never fatal, very few cases coming under the hands of a doctor.

The disease involves temporary discomfort, and some doctors claim that it lowers the bodily resistance so that other ailments, particularly pulmonary diseases, are more readily contracted and that the average life of brass

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smelters and casters is, therefore, reduced.

Prevention.

To prevent "shakes" the zinc fumes must not be allowed to enter the nose or mouth. The use of respirators is seldom employed, as the men prefer an occasional attack rather than the continual discomfort of wearing the respirator.

As enough fumes to develop immunity is not present in founderies where yellow brass or manganese bronze is seldom poured, and as the small amount produced would not warrant installing, forced ventilation, the inconvenience from "brass shakes" may be as great and the cases as many as in rolling mills where alloys high in zinc are constantly poured, but where there is proper ventilation, and where immunity is developed. Hence in the plants where alloys high in zinc are poured only occasionally, the wearing of respirators during such pouring should be made compulsory. As the toxicity of the zinc fume probably exists whether the fume be inhaled or swallowed, eating food or chewing tobacco in the presence of zinc fume, or without previous washing of the hands and face should be prohibited. No trouble from "shakes" is reported from any plants dealing only with bronze, red brass or other alloy low in zinc, save for one isolated case where superneckel, as found by Dr. Gillett, free from zinc, was melted in a battery of furnaces sometimes used for yellow brass, but no alloy containing zinc were being melted at the time the attack was contracted.

The fumes given off during the melting and pouring of brass, lead, tin, antimony, zinc or bismuth are poisonous and should be avoided as much as possible.

Excessive inhalations of the fumes of these materials may be the cause of mild forms of metallic poisoning indicated by temporary illness, such as the feeling of exhaustion, nausea, marked pallor and chills. For treatment give hot non-alcoholic drinks and induce perspiration. Proper ventilation, maintenance of proper temperature, etc., should be adopted in all cases.

The Effect of Temperature on the Health of Mines.

In Northern Minnesota a number of readings were taken which represented 25 per cent of the total places. In one place dry bulb registered 72 degrees F., wet bulb 69 degrees F., with a relative humidity of 86 per cent. In an isolated stub end the average for mine on air course was 48 degrees F. dry bulb and 46 degrees F. wet bulb. Another reading showed wet bulb 46 degrees F. and dry bulb 45 degrees F., with a relative humidity of 87 per cent.

In a stub end ventilated by mechanical fan dry bulb registered 73 degrees F., wet bulb 69 degrees F., giving an average humidity of 82 per cent, which is a desirable working mine.

In some of the iron mines of Minnesota warm places were observed, especially in isolated places, but this was due primarily to falling timber and decayed timber.

The above figures in a measure represent nearly all the iron mines in Northern Minnesota.

European coal mines are deep and therefore hot, American coal mines are shallow and it is very rarely that the temperature rises much over 70.

In a certain section of Minnesota statistics were compiled to show the natural causes of death among miners. In this particular section there are 2,840 miners employed. From January 1, 1914, to November 16, 1915, thirty-three men died as a result of illness—divided as follows:—Three died from typhoid fever; two from kidney trouble; two from cancer; four from acute alcoholism; four from heart trouble; one from blood poisoning; seven from pneumonia; one from gangrene; one from intestinal obstruction; one from duedenal ulcer; one from exposure to cold; one from tetanus; one from brain abscess; three from consumption, and one from hemorrhage of brain.

It will be seen that pneumonia was responsible for the most deaths among the Minnesota miners, seven men out of 2,840 having succumbed to this disease. This may or may not be alarming and could not be considered a criterion as the prevalent diseases which readily respond to treatment have not been recorded. However, it may show that miners were subjected to this disease by reason of their walks from upcast shafts and while perspiring walk to dry houses, which are in some places a considerable distance from the mine exits.

Miners' Nystagmus.

Dr. Frederick T. Hoffman made an exhaustive study of miners' nystagmus for the Bureau of Mines, and his report may be found in United States Bureau of Mines Bulletin 93.

In his report he claims that miners' nystagmus is the result of a peculiar form of eye strain which often results in the impairment of vision and consequent diminution of the wage earning capacity of the workman. According to Greer, an authority on industrial diseases and accidents, miners' nystagmus occurs in five per cent. of all miners, but it is quite probable that the reference is to European coal miners rather than to men employed in all branches of the mineral industry.

According to the same authority, miners' nystagmus is associated with a twitching of the eyelids and with considerable diminution of the range of movement of the eyes, and is particularly liable to occur in patients whose vision is subnormal owing to errors of refraction, especially astigmatism. It causes much weariness to those suffering from it and prevents them from following their usual occupation, as owing to the movements of the eyes everything at which they look appears to be in a state of perpetual motion and in consequence their visual acuity is more or less reduced. When the movements cease the vision becomes as good as it was previously. Nystagmus as an occupational symptom is not alone confined to miners and may develop in those who are compelled to give close visual attention to constantly moving objects.

Nystagmus is found chiefly in miners who work at the coal face in a more or less constrained position of the body and the eyes. A man lies almost on his side with his legs crooked up and strikes the coal with a horizontal swing of his pick at the bottom of the coal seam. A miner engaged at this work will direct his gaze to different places as it becomes necessary for him to strike, for the eyes will follow the pick point, but the tendency will be for the gaze to be directed upward (using the ocular elevation) more or less obliquely. He will be sometimes on one side and sometimes on the other. His head will be thrown back and flexed more or less on the shoulder beneath.

Snell says that Nystagmus occurs among miners working with all kinds of lighting, and that he has met with it among those working with safety lamps, candles, large open lamps as well as when artificial light was really good. He says, however, that there are reasons for believing that the strain is greater in poor light and that Nystagmus is met with in greater frequency under such conditions.

Symptoms.

Oscillation of the eyeball, objects dancing before the eyes, headache, giddiness, both eyes affected, tremors of the head, eyelids and of the muscles of the face or neck are often associated.

Prognosis.

Prognosis is usually good even for old standing cases if the directions as to change of the work are followed.

In some cases, according to Snall, it will suffice if the patient ceases from coal getting without altogether stopping work in the mine, but generally it is advisable, especially if the nystagmus be of a high degree and of some standing, to recommend cessation altogether from work underground. After relief has been effected return to the mine is practicable, provided the head can be kept straight and the upward turn of the eyes avoided. Resumption of the old kind of work is followed sooner or later by a recurrence of the symptoms. Medical treatment is of service.

Hookworm.

As regards the prevalence of hookworm in the country, preliminary investigations have shown comparatively little in Northern coal mines, although it is undoubtedly prevalent in Southern coal mines.

J. H. White, of the Bureau of Mines, has recently completed an exhaustive study of the hook worm in deep California mines, and he found that the spread of the disease is due to the warmth of the mines and to climbing up and down ladderways, it being easy for the infected mud to get on the hands of the miners.

Health Conservation at Steel Mills.

Dr. J. A. Watkins, past assistant surgeon of the United States Public Health Service, recently completed technical paper No. 102, a Bureau of Mines publication on "Health Conservation at Steel Mills." The edition is not quit ready for distribution, but, through the kindness of the director of the bureau, I am permitted to make reference to it.

The number and seriousness of occupational health hazards have increased rapidly witr the evolution of new machinery, the use of new materials and process of manufacture and the resulting new products. The attempted or forced adoption of the human body to this changed environment has resulted in many abnormal conditions. The importance of the prevention of disease among workers can be realized from the fact that the average loss of time due to illness among approximately 30,000,000 workers in the United States is nine days a year. This is 270,000,000 working days or about 750,000 working years annually. If medical attention be estimated at one dollar a day and earning at two dollars a day this loss amounts to $880,000,000 annually.

Dr. Watkins urges medical supervision of employes and he makes the following suggestions:—

The working man has a right to and **that he be not** required to work beside men who are diseased or mentally deranged.

A plant hospital should be provided to give emergency relief to those injured or taken ill while at work. Fatigue lowers the vitality of the individual and thereby increases his susceptibility to the hazards of his occupation and to disease in general. There should be sufficient space for each employe in order that close proximity to dangerous machinery or undue exposure to heat, dust, fumes or gases or harmful material or products may be minimized.

Floorings affect the health mainly through the liability of floors made of certain materials to retain germs of infectious diseases. Hard elastic substane, such as cement or steel, make unsatisfactory floors for employes who have to be on their feet constantly.

He suggests that floor space should be kept clean and the floor should be so constructed as to permit easy and thorough cleansing. The workshop and factory should have proper lighting. It gives increased efficiency. The ill effects of bad lighting gives impaired vision and often is responsible for accidents. Noises cause lowered efficiency by having a deteriorating effect on the more sensitive functionating parts of the ear. Improper ventilation is responsible for general impairment of health.

The combination of high temperature and high humidity of the shops eventually affect the health of those exposed. The economic effect is a decrease in the efficiency of the worker that is a lowering in the character and amount of work performed. Continued exposure to high temperature and high humidity increase the susceptibility to disease and may cause muscular and joint pains, aches, cramps and in extreme cases, heat exhaustion and continued exposure will eventually cause anemia and skin eruptions and tends to induce premature old age.

The number of hours which a man actually works has a direct bearing on fatigue. After a certain amount of exertion for a given time, the efficiency of the employe falls.

Sanitary washing and dressing rooms are an aspect of this problem that should not be overlooked.

Water closets should receive proper consideration. Correct ventilation of these places consists not so much in the supplying of fresh air as in the rapid removal of disagreeable odors as they arise.

Drinking water should be pure and should be adequately supplied. The water should be so distributed to preclude all possibility of contamination. The water should be of proper temperature.

INDUSTRIAL CONFERENCE ON OILS AND MOTOR FUELS

Raymond F. Bacon, of Mellon Institute, Presiding.

At concluding meeting in Rumford Hall speakers urged co-operation between motor car and petroleum product makers as remedy for shortage in gasoline.

A symposium of the general discussion of the problem presented by the present high cost and scarcity of fuels for internal combustion engines, and especially for automobiles, constituted one of the concluding features of the American Chemical Society's meeting. The consideration of this timely subject was called an interchange of views on "Oils and Motor Fuels," and was presided over by Dr. Raymond Foss Bacon. It was the consensus of the speakers at this meeting that little confidence or faith should be placed in the recently-discovered gasoline "substitutes," containing frequently 90 per cent. of kerosene or some violent explosive, or in alcohol, to replace this fuel, but that the most certain remedy for the present deficiency in fuels suited for use in motor vehicles was to be found in a closer co-operation and collaboration of the automobile manufacturers and the makers of petroleum products, as a result of which the engines of the motor cars may be adapted to employ the fuel which is most easily and plentifully made and supplied by the fuel makers at any given time.

Details of this symposium follow:—

Dr. Bacon, in opening the discussion, stated that the great need of the petroleum industry is for greater flexibility in refining. Formerly the demand for kerosene exceeded the output—now gasoline is in great demand—an ideal condition would be one enabling refiners to manipulate crudes so as to convert them into exactly the proportion of refined products needed.

Lubricating Oils.

Dr. Maybery, "dean of the petroleum industry" in the U. S., said that a broad line of investigation should be undertaken on petroleum, starting with analysis of the crudes, and embracing all available crudes and products, leading to standardization of all products for the benefit of the consumer. Research work of a high order is required and this should embrace co-operative efforts on the part of the manufacturers and institutions.

As an example of the possibilities of applied research on lubricants, Dr. Maybery showed a sample of oil he had produced which was of such extraordinary merit as a lubricant for watches that watchmakers were willing to pay $100 a gallon for it.

Dr. David T. Day, long in the government service and recognized authority on statistics of the petroleum industry, stated that methods of analysis for oils will be described in a bulletin by himself and Dr. Rittman, shortly forthcoming. However, the analysis of oil is not sufficient to know its value service, tests are required. The public must depend largely on the purchase by brand from responsible manufacturers.

Dr. C. V. Bacon, of New York, favored the American Society for Testing Materials as sponsor for investigation leading to adoption of standards.

Motor Fuels.

The old standard for gasoline requiring certain specific gravity limits are of no value now because of the wide variation in distillates from crudes of different origin and the increasing production of motor fuels by cracking or "synthetic" processes. Dr. Gray, of the Texas Company, called attention to laws existing in certain States which require that the gravity of gasoline be published by every seller. This gives a false idea to the public as to the importance of the test and enables certain oils to be sold to better advantage than others of equal fuel value.

Dr. Rittman, formerly of the Bureau of Mines, said that the chemist must work with the automobile engineer so that the motor may be designed most efficiently, and spoke of experiments at Dayton, Ohio, which have already resulted in a change in the construction of the manifold conducting the gas to the cylinders.

Dr. Rittman also commented on the "gas savers" widely advertised and warned the public that these are unlikely to have the value claimed for them. Usually they contain at least 90 per cent. kerosene. Dr. Rittman has found nitroglycerine and even the warfamed T. N. T. as ingredients of these proprietary "gas savers."

In spite of the fact that Ford plans to build 2,000,000 cars in the year ending July 1, 1917, there is no need for owners of automobiles to worry about a real gasoline famine, and the petroleum chemists do not agree with their colleagues of the organic division who predict that alcohol may supplant gasoline as a universal fuel for internal explosion engines.

Dr. Humphreys, of the Standard Oil Company of Indiana, said that dealing with mid-continent oils at Whiting, 300 stills, each of 250 barrels' capacity, are converting crude oil into 65 per cent. of a product, which, in turn, yields 85 to 90 per cent. motor fuel. He says that it is within the range of possibility to convert 85 to 90 per cent. of mid-continent crudes into gasoline.

Cracking Petroleum.

Roughly speaking and without any attempt to be exact, it may be said that the more atoms there are in a molecule of petroleum, the heavier it is. So the bodies comprising natural gas are simple, those comprising gasoline more complex, kerosene still more so, lubricating oils more complex yet, and the graphic formula of the heavy tars would look like an attack of measles on a big sheet of paper. In order to provide gasoline to meet the increased demand chemists have devised a means of "cracking" petroleums, which means just what it says; lighter bodies are split off from the heavier ones, cracked off, usually by means of temperature and pressure. Under certain conditions these lighter bodies go over into the coal-tar group in which there is an entirely different arrangement of the atoms in the molecules.

Messrs. Gustav Egloff and Thomas J. Twomey, of Columbia University, in their paper on "The Recracking of a Cracked Oil," have concluded that once a heavy petroleum has been cracked, it does not lend itself so well to the purpose again. They conclude, indeed, that repeated cracking affect those parts of the heavy oil that were unchanged in the previous processes, and that there is a limit to the number of times that a petroleum may be recracked. This they attribute to the disposition of the oil, finally, to go over into the coal-tar type of compounds which, under the harsh treatment of cracking, break down entirely and dissociate into their elemental parts of carbon dust and hydrogen.

Process Desired by Refiners.

At the symposium on "Oils and Motor Fuels" presided over by Dr. Bacon, it was brought out that a process is desired that will enable refiners to do what would have appeared to be the impossible not long ago. They desire

(Continued on page 85.)

THE

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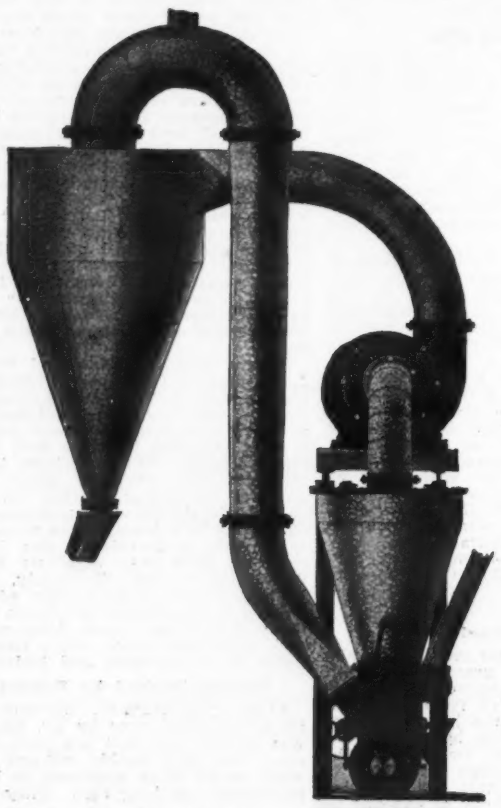

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"MADE IN AMERICA" THE SLOGAN OF AMERICAN ELECTROCHEMICAL SOCIETY

What the Electrochemists Are Doing and What They Have Accomplished During Past Few Years Shown in Paper and at Expositon.

Wednesday was a dual day of "Chemists' Week" as it was "Electrochemical Day" at the exposition, and the opening of the sessions of the American Electrochemical Society as well.

The first general meeting of the society was called to order in the convention hall on the mezzanine floor of the Grand Central Palace by President Colin G. Fink, of the New York section, who presided, and who made a speech extending a warm welcome to the visitors from all sections of the country. In the absence of President F. A. J. Fitzgerald because of illness, his address was read by Dr. J. A. Mathews. Mr. Fink made an earnest plea for a membership campaign, and called attention particularly to the work of the electrochemists of the country as illustrated in the exposition, and to the arrangement of the exhibits. In his address President Fitzgerald wrote in part:—

Address of President Fitzgerald.

The existence of an idea that because something is imported it must be of greater excellence, obviously involves the facit assertion that things made in this country are inferior. This attitude toward imported articles has, I think, been considerably modified in recent years, and as a means of bringing about this desirable modification exhibitions such as this of our chemical industries are of immense value.

Certainly it is not desirable to attempt to develop any spirit of nationalism which would induce us to support a home product which was inferior to the imported, but it is always well, even from a purely selfish point of view, to investigate what can be done at home before going abroad. If the home product is inferior we can try to find the cause of its inferiority, and then, if possible, assist that industry to equal or excel the foreign product. Here again we find a valuable function of a national exposition such as this.

United States Near the Front.

In various industries the United States is now in a position where it is well to the front or actually leader, and I think we may assert without fear of contradiction that the electrochemical industry is one of these. The field is comparatively new, and we did not start in it with the handicap which existed in many of the older industries. In certain industries covered by the general term electrochemical we certainly have the foremost place, as, for example, in the manufacture of artificial abrasive materials. In other cases (such as the application of the electric furnace to steel) we have lagged behind until recently. Again, in others we are a long way behind developments in Europe, as is the fixation of atmospheric nitrogen.

It is well worth while studying those subjects in which we are not or have not been in the front rank in order to determine why this is so. Thus, a study of the development of the use of the electric furnace for the manufacture of steel seems to show that special conditions in Europe tended to stimulate the development there and that it was actually to our advantage that the pioneer work should be done abroad rather than here.

A Liberal Water-Power Policy.

On the other hand, the study of the development of electrochemical methods of nitrogen fixation show a different reason for our backward position. Those not conversant with electrochemical history are apt to believe that this is altogether a foreign development, never having heard of the work of Bradley and Lovejoy at Niagara Falls more than twelve years ago. Here we had a remarkable development that was arrested because of adverse environment. In Europe, when similar developments took place, it was possible to obtain abundance of cheap electric power. When the question of national preparedness is in everyone's mind, we are asked what is to be done about the preparation of nitrates. In this respect we are by no means ready. The Committee on Public Relations of the American Electrochemical Society in its report to the administration on this subject recommends "a liberal water-power policy, as the question of the cost of power is vital to several of the processes.

The electrochemist uses a great variety of materials and articles—chemicals, physical apparatus, electrical machinery, etc., some made in America, others abroad. It was with this in mind that the Electrochemical Society decided that at its meeting held here at the same time as this great National Exposition of Chemical Industries it would be of interest and value to devote a whole session to the subject, "Made in America," as related to electrochemical interests.

More Critical Study of Materials.

This discussion of the subject should be useful in several ways. It may help to develop a more critical study of imported materials and articles, and this very necessary, for it is a fact that we are often apt to be less critical of an imported than of a domestic article, and there can be no doubt that the foreign manufacturer often likes to unload on us materials which he could not sell at home.

As an example of this I may mention the advice I received from an eminent American physicist, who gave me the address of a well-known German manufacturer of thermometers. Said he, "When you place your order tell him that you know what good thermometers are and that you don't want him to send any of the poor quality which German manufacturers think are quite good enough for American consumption."

In other words, the discussion of "Made in America" will stimulate a more discriminating appreciation of imported articles.

Another useful end will be served if the discussion of it reveals why the domestic product does not give the satisfaction which the imported material does. This may develop much needed co-operation between the consumer and the producer. There has not been enough of this. If the domestic article is not satisfactory the consumer has been in the habit of throwing it out and using the imported article without having sufficiently long sight to see that it was worth while to co-operate with the producer in helping him to better his manufacture.

It is, perhaps, getting dangerously near a political question, which ought not to be political, to say that mutual co-operation of producer and consumer is in the long run of far more importance than protection, which is sometimes apt to encourage the manufacture of inferior articles.

Perhaps one of the greatest uses of such an exhibition as this is the way in which it brings together the manufacturer and the consumer to their mutual benefit, and for this we surely owe a debt of gratitude to those responsible for it.

Detailed Program of Meetings.

THURSDAY.

9.30 A. M.—Hotel Astor.—"Made in America" Session. Followed by Luncheon.

2 P. M.—Hotel Astor.—Reading and Discussion of Papers:

O. P. Watts and P. L. de Verter, "The Protection of Iron by Electroplating."

E. A. and L. T. Richardson, "Atmospheric Corrosion of Commercial Sheet Iron."

O. C. Ralston and C. E. Sims, "The Electrolytic Recovery of Lead from Brine Leaches."

H. J. Morgan and O. C. Ralston, "Electrolytic Zinc Dust."

S. Fischer, "Electrolysis of Vanadium Salts."

L. D. Hammond, "The Electrodeposition of Nickel."

F. C. Mathers and F. G. Sturdevant, "Current Efficiencies in Nickel Plating Baths With Rotating Cathodes."

W. Blum, H. D. Holler and H. S. Rawdon, "Deposition of Copper in Electrotyping Baths."

8 P. M.—Smoker at the Hotel Astor (to which the members of the American Chemical Society and other visiting chemists and engineers are invited. Admission by ticket only).

FRIDAY.

9.30 A. M.—Reading and Discussion of Papers:

C. F. Burgess, "Characteristics of Small Dry Cells."

L. C. Turnock, "Effect of Temperature on the Performance of the Edison Storage Battery."

Carl Hering, "High Temperature Heat Developed During Electrolysis."

F. A. Fahrenwald, "The Possibilities of Developing Super-refractory Materials for Incandescent Lighting."

T. H. Leaming, H. Schlundt and Julius Underwood, "Composition of the Ionization Currents Due to Equal Quantities of Radium Emanation."

M. J. Brown, "A New Method for the Study of Silver Peroxynitrate."

Grinnell Jones and M. L. Hartmann, "The Equilibrium Between Bromine and Potassium Bromide Solutions at 0."

12.30 P. M.—Luncheon, Hotel Astor.

2 P. M. to 6 P. M.—Visiting the Exposition.

SATURDAY.

10.30 A. M. to 4.30 P. M.—Complimentary Excursion Up the Hudson, to which members of the American Chemical Society were invited up to the capacity of the boat.

DR. M. C. WHITAKER,

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TECHNICAL ASSOCIATION PULP AND PAPER INDUSTRY MEETS DURING LAST THREE DAYS

Technical Discussion, Solely, and in Collaboration With Chemists, Feature of the Program—Some of Papers Presented.

The opening meeting of the Technical Association of the Pulp and Paper Industry was held on Thursday morning at 10.30 o'clock at Schermerhorn Hall, Columbia University, the general meeting continuing all day, with special papers and reports. An aduress of welcome was made by Dr. Bernhard C. Hesse, of the American Chemical Society, who held out the highest co-operation of American chemists with the paper and pulp men as most desirable so that the stimulated paper industry of this country could reach its highest manifestation and development.

A response was made by Dr. Hugh P. Baker, of Syracuse University. H. E. Fletcher was the presiding officer.

The following is the detailed program of the Association:—

THURSDAY.

10.30 A. M.—Schermerhorn Hall, Columbia University.—Opening of general meeting (continuing all day). Papers and reports:—

"Liquor Making, the Cooking of Wood by the Soda Process, the Recovery Process."

Report of the Committee on Soda Pulp, by Martin L. Griffin, Oxford Paper Company, Rumford, Me., chairman.

"Cellulose Fibers and Their Reaction to Dyestuffs," by Otto Schutz, chairman of Committee on Dyestuff Adulterations.

"A Study of Some of the Factors Influencing the Retention of Fillers by Paper Pulp," by Prof. John D. Rue, Department of Chemical Engineering, University of Michigan, and F. Edwin Ford, holder of the Paper Manufacturers' Fellowship at the University of Michigan, Ann Arbor, Mich.

"Management of the Beater Room," by A. B. Green, of S. D. Warren & Co., Cumberland Mills, Me.

"Some Chemical and Physical Reactions of Rosin Sizing Solutions," by J. A. de Cew, Process Engineers, Ltd., McGill Building, Montreal, Canada.

"Automatic Pressure Regulators for Wood Pulp Grinders," by Edward T. Moore, Westinghouse Electric and Manufacturing Company, Syracuse, N. Y.

"United States Government Publications Pertaining to Pulp and Paper," report of Committee on Bibliography, Henry E. Surface, chairman.

"Abstracts of Foreign Literature of Pulp and Paper," report of Committee on Abstracts, Prof. J. N. Stephenson, Department of Chemistry, University of Maine, Orono, Me., chairman.

"A New Method of Surface Sizing," by H. M. Wheelwright, Wheelwright Paper Company, Fitchburg, Mass.

"Methods for the Testing of Lime, Caustic Soda, Soda Ash, Sulphuric Acid and Starch Derivatives," report of Committee on Standard Methods of Testing Materials Used in the Manufacture of Paper, by Max Cline, International Paper Company, Glens Falls, N. Y.

"Testing Bisulphite Liquors in the Sulphite Mill," by A. Christensen, chemist, Nekoosa-Edwards Paper Company, Port Edwards, Wis.

"Protection of Forests from Fire," report on the Kalamazoo resolution, by P. S. Lovejoy, assistant professor of forestry, University of Michigan.

"Guesses About the Pulp Wood Supply of the Future," by P. S. Lovejoy, assistant professor of forestry, University of Michigan.

"Acid Resisting Qualities of Different Alloys Against Bisulphite Cooking Liquor," by Sidney E. Lunak, chemist, Forest Products Laboratory, Madison, Wis.

"Some Problems in the Drying of Paper," by Jay Grant de Remer, of Martin & de Remer, New York.

"The Rag Situation," by Carl Magnus, chemist, Martin & Wm. H. Nixon Paper Company, Manayunk, Philadelphia, Pa.

"Report on Commercial Paper Dyestuffs," by Otto Schutz, chairman of Committee on Dyestuff Adulteration.

"The Use of Bark for Paper Specialties," by Otto Kress, Forest Products Laboratory, Madison, Wis.

FRIDAY.

10.30 A. M.—Grand Central Palace. Second day's sitting. Conclusion of reading of reports and presentation of papers.

2.30 P. M.—Grand Central Palace.—Joint Conference with the American Chemical Society. Robert B. Wolf, presiding.

In the discussion Charles F. Rhodes talked on "Waste Liquor," H. E. Fletcher on "Handling Stock from Digester Over Wet Machine," H. P. Corruth on "Color" and "The Effect of Humidity Upon the Physical Constants of Paper."

Ladies, 2 P. M.—Complimentary theatre party at the Strand Theatre.

SATURDAY.

10.30 A. M.—General meeting to complete unfinished business. Visiting the exposition.

7.30 P. M. to 10.30 P. M.—Grand Central Palace.—Moving pictures on technical subjects.

Council Meeting.

Dr. Herty Becomes Editor of Journal—Dr. E. G. Love New Treasurer—Boston Next Convention City.

At a meeting of the council of the American Chemical Society, held in Rumford Hall on Wednesday evening one of the most important matters under consideration had to do with the future development and scope of the Journal of Industrial and Engineering Chemistry. For the past few years, the editor has been Prof. M. C. Whitaker, of Columbia University, but Dr. Whitaker's duties as professor of industrial chemistry at Columbia will prevent him from devoting the necessary time required by the enlarged scope of this publication. Fully appreciating Prof. Whitaker's position, the council elected Dr. Charles H. Herty as editor and manager of this journal. Dr. Herty, for the past two years, has been the active president of the American Chemical Society and is in charge of the department of chemistry, University of North Carolina, Chapel Hill, N. C. He will resign this position, however, and on January 1 will come to New York to take entire charge of the publication and other business matters conected with this journal.

Dr. W. A. Noyes, of Urbana, Ill., was re-elected as editor of the Journal of the American Chemical Society. Chemical Abstracts has been under the charge of Mr. E. J. Crane, of Columbus, Ohio, who is still retained as editor-in-chief. For the past ten years the business matters of the American Chemical Society have been in the hands of Dr. Charles L. Parsons, of Washington, D. C., and the council voted to re-elect Dr. Parsons as secretary for the following year.

For the past twenty-five years Dr. A. B. Hallock has acted as treasurer and has devoted much time and energy to the office. Wishing, however, to take life somewhat easier than in the past, Dr. Hallock has decided to resign his position as treasurer of the association, and in place of Dr. Hallock one familiar to everyone in chemistry has been appointed to this office, namely, Dr. E. G. Love.

Other matters were considered at this meeting, not least of which was an invitation—accepted—from the city of Boston to hold the next annual meeting of the American Chemical Society in that city. The date of the meeting decided upon will be about September 1, 1917.

Naval Consulting Board Will Inspect Atlantic Coast Laboratory Sites.

Washington, Sept. 29, 1916.

The sub-committee of the Naval Civilian Consuling Board, which was appointed several weeks ago to recommend to Secretary Daniels of the Navy a site for the authorized $1,500,000 naval experimental laboratory, will leave New York early next week for an inspection trip to locations along the Atlantic Coast and on Chesapeake Bay, between New York and Washington, D. C. The sub-committee is headed by Thomas A. Edison, the inventor, who is also chairman of the full board. The sub-committee will inspect several sites where the government already owns land.

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WHO THE EXHIBITORS WERE AND WHAT THEY PRESENTED TO THE VISITORS

With almost 200 exhibitors, covering every branch of industrial chemistry, dyestuffs manufacture, the by-product coal and coke industry, pharmaceuticals and pharmaceutical apparatus, biologics, and machinery ranging from the simplest appliance to a complete plant for the most intricate processes, the Second National Exposition of Chemical Industry opened at the Grand Central Palace last Monday, and continued until Saturday night, with an increasing attendance as the excellence and educative value of the exhibits became more generally known and appreciated.

The combined capital represented by the exhibitors reached the enormous total of two and three-quarters million dollars.

In addition to the many exhibits, which embraced the four principal divisions of Chemicals and Chemical Machinery, Coal-Tar and Coke By-Products, Aniline and other Dyestuffs, Pharmaceuticals and Pharmaceutical Apparatus and Machinery, there were the Government exhibits of the Bureau of Mines, Bureau of Standards, Bureau of Commercial Economics, etc., and a special program of industrial moving pictures covering every step in many processes necessary in modern chemical industry.

The principal exhibitors, with details of what was shown, are named herewith in the following comprehensive summary of the Exposition.

CHEMICALS AND CHEMICAL MACHINERY.

A most attractive exhibit of its "Buflokast" chemical apparatus and of its "Bufflovak" vacuum apparatus was made by the **Buffalo Foundry and Machine Company** in a handsomely decorated and illuminated space covering the entire west end, or Depew place side, of the ground floor of the exposition. A mammoth illuminated picture of this company's plant was displayed to great advantage immediately under its name in red letters, and most realistic representations of interior and exterior views of this plant and of its machines and parts thereof were shown in photographic reproductions on colored glass, with red colored electric light backings on the pillars and posts and along the railing surrounding this exhibit. On either side of the mammoth delineation of the company's plant were two huge announcements, one of which described its output of "Buflokast" chemical apparatus, as consisting of acid resisting castings, caustic pots, fusion kettles, nitrators, reducers, sulphonator kettles, aniline apparatus, phenol apparatus, beta naphtho apparatus; crystallizing pans, nitric and sulphuric retorts and heat-resisting castings, while the other set forth its "Bufflovak" vacuum apparatus as including vacuum drum dryers, vacuum shelf dryers, vacuum rotary dryers, vacuum pump-condensers, impregnating apparatus, deresinizing apparatus, aniline and pheno stills, atmospheric drum dryers and atmospheric rotary dryers. The display of this company's apparatus itself consisted of a gigantic nitric retort, bearing on one side the statement that "complete plants or parts are furnished for manufacturing nitric acid," as well as an "autoclave," having 1,000 pounds working pressure, and announcing on its sides that this apparatus is "built in many sizes for different pressures." A smaller size "autoclave" was placed beside the larger one, to show the wide range of sizes made by the company. There were also in this exhibit a big crystallizing pan, bearing the statement that this apparatus is also "built for vacuum;" a fusion kettle, a vacuum shelf dryer, a vacuum drum dryer, an evaporator, a sulphonator, a caustic pot and a nitrator. The exhibit was in charge of E. G. Rippel, general manager of the company.

The **Swenson Evaporating Company,** of Chicago, exhibited its evaporators, leaching, beet sugar machinery and reclaiming machines, making a special feature of a working model of its Standard Double Effect Evaporator, having a combined capacity of 30,000,000 gallons of water a day. This company also showed some of the materials which have been concentrated in the Swenson evaporator, including glycerin, sugar, glucose (corn sugar), glue, salt (sodium chloride), beef extract, potash, milk whey, tomato pulp, malt extract, tannin extract, tobacco extract, molasses waste, Steffen's water, wool scourings, distillery slop, Twitchell water, pepsin, gelatin, tankwater, fish water, steep water, black liquor, garbage water, sorghum syrup, tartaric acid, sulphite waste, calcium acetate, mercerizing waste, western lake water, bittern, caustic soda, zinc chloride, iron sulphate, sodium nitrate, sodium sulphate and calcium chloride. The company also announces that it has frequently supplied evaporators for the manufacture of potash from western lake waters, alunite, distillery slop, kelp, wool scouring and bitterns.

The **Scientific Materials Company,** of Pittsburgh, showed, in an attractive exhibit, its Sciamatco Hydrostatic Draft Indicator and Recorder, its Sciamatco Gas Volume Recorder, Scimatco Hydrostatic Pressure Recorder, Scimatco Rough and Fine Grinders, Scimatco Polishing Machine, Fieldner Molybdenum Wound Furnace, with a maximum temperature of 1,750 degrees Centigrade, and its Burrell Gas Apparatus.

The **Huff Electrostatic Separator,** for electrostatic ore separation constituted the exhibit of the Huff Electrostatic Separator Company. This ore separator is based on a fundamental principle of electricity, namely, that bodies charged with like kinds or polarities of electricity repel one another, while bodies charged with unlike kinds or polarities of electricity attract one another, and utilizes to effect separations of the minerals in ores, their differences in electrical conductivity. This electrostatic process is said to be accomplishing, in constant field practice, vastly better commercial results, separations and concentrations of ores, and is applicable to more diversified usage and fields than was originally expected by its most sanguine advocates. It is now recognized as a standard method, an advanced step beyond any other known process, as, from ores applicable to the process, it saves more values and makes valuable and available material never before commercially separable or commercially recoverable by mechanical means.

The **J. P. Devine Company,** of Buffalo, N. Y., showed in its exhibit numerous samples of the "Devine" patented Vacuum Drum Dryers, including its "Passburg system" single and double drum vacuum type and single and double drum non-vacuum type. This company also showed a complete vacuum drying installation, consisting of a "Devine" vacuum chamber dryer, including trays for material, surface condenser and vacuum pump, and demonstrated its "Devine" rotary vacuum dryers for all materials that can be mixed or tumbled in the drying. A complete line of chemical apparatus made by this company was also shown in its booth, and the statement was made therein that this company is prepared to supply "complete plans for the production of aniline oil, benzol, beta naphthol, paranitraniline, T. N. T., salicylic acid, H. acid, naphthalene, dimethylaniline, dimethyldipgenyl urea, sulphur black and all coal-tar derivatives, including the higher intermediate colors and dyestuffs.

Interesting exhibits of rotary vacuum pumps and pressure blowers was made by the **Abbe Engineering Company** and the **Beach-Russ Company,** whose booth attracted especial attention, chiefly because it contained a gigantic water column gauge in a glass tube seventy-five feet high, attached to a wooden column for demonstrating the vacuum of the Beach-Russ Vacuum Pump, a working model of which was shown in these companies' booth. The water column gauge, containing water tinted pink with a water soluble dye, was said to be the only one of its kind in existence since the original water column devised and constructed by Torrecelli. The Abbe patended manhole frame, with patented detachable flanges, was also shown in this exhibit.

The **Driver-Harris Wire Company,** of Harrison, N. J., showed its "Nichrome" rotary vacuum pumps and pressure blowers, carbonizing and heat-treating boxes, pyrometer protection tubes and baskets and "Nichrome" for metal cleaning and for dipping and heat treating processes.

An interesting display of drying apparatus was shown by the **Ruggles-Coles Engineering Company,** whose booth proclaimed it as the manufacturers of "double-shell dryers for all materials." Among other products, this company advertised in its exhibit its "direct heat dryers," "indirect heat dryers" and "steam dryers," as well as "special machines to suit unusual conditions." This company also displayed in models and pictures its dryers as used to dry coal, cement rock, clay, sand, gypsum, glass sand, ores and concentrates, granulated slags, marl, chalk, peat and many other organic materials, sewage sludge and tankage, and how its portage dryer and heater is especially adapted for the bituminous surfacing of highways, while its semi-portable dryer and heater is likewise used by many asphalt and paving companies for heating sand and stone.

A well-arranged and "drawing" exhibit of its cast iron kettles, lined with acid-resisting porcelain enamel, was made by the **J. L. Mott Iron Works,** in a booth admirably fitted for this purpose. Among other products which this company showed was a special cast iron spouted lead melting kettle which attracted consideable attention. The J. L. Mott Iron Works state that they have "for many years made a specialty of kettles and similar constructions for many purposes suitable for chemical manufacturers and manufacturers of oils, paints, varnish, soap, lead, white lead, black lead, rubber goods, furniture, shade cloth, smelters, soft metal goods, babbit metal, zinc and spelter goods, cheese manufacturers, farmers, butchers, packers, nickel, silver and gold platers, patent medicines and any other industry requiring kettles." This company adds that no possible casting is too large for it to make.

The **Werner & Pfleiderer Company,** of Saginaw, Mich., had an interesting exhibit of "Universal" kneading and mixing machines, for food, chemical and kindred industries, of "vacuum" and other types, as well as of its "Universal" rubber masticator. A working model of this latter machine, arranged for belt-drive, with friction clutch and instantaneous release, constituted the principal feature of this exhibit.

The **Tolhurst Machine Works,** of Troy, N. Y., exhibited its extractor basket, driven by a special red belt, called "Condor," which is made by the Manhattan Rubber Manufacturing Company, of Passaic, N. J.

The **Zaremba Company,** of Buffalo, N. Y., made an excellent exhibit of some of its evaporators and their work, including the Zaremba high concentrator, Zaremba crystallizing evaporator, rapid circulation evaporator, acid-proof linings, continuous causticizing apparatus, leaching cells and diffusion batteries.

An extensive line of filters, known as Kelly filters, for every conceivable use in chemical industry plants was shown in a large booth, especially fitted for this purpose. This exhibit was made by the manufacturers, the **Kelly Filter Press Company,** of Salt Lake City, and by Emil E. Lungwitz, as sales agent, as well as Eastern representative, for L. O. Koven & Brother, of Jersey City, whose products were shown in an adjoining booth.

The **Sowers Manufacturing Company,** engineers and founders, of 1298-1310 Niagara street, Buffalo, N. Y., exhibited its Dopp seamless steam jacketed kettles, mixers and vacuum pans, described as "seamless, leakless and no wear-out to them," in a booth containing working models of the Dopp seamless steam jacketed agitator, Dopp seamless steam jacketed kettles and Dopp seamless steam jacketed vacuum pans, as well as standard outlets and valves.

The **Pfaudler Company,** of Rochester, N. Y., manufacturers of glass, enameled steel tanks and apparatus, has an attractive exhibit of their products best suited to the needs of the chemical industry.

Thermometers, safety-valves and other heat-measuring and registering devices and accident-preventives were shown in endless array in the exhibit of the **Thermal Syndicate, Ltd.,** manufacturers of Vitreosil products.

The **Sharples Specialty Company,** centrifugal engineers, made a special display in their exhibit of its Sharples commercial super-centifuge.

The **Palo Company** showed in its exhibit a complete line of chemical and metallurgical apparatus.

Arthur D. Little, Inc., chemists, chemical engineers and managers, represented in Canada by Arthur D. Little, Ltd., of Montreal, confined its exhibit to a booth from which it offered expert advice on the operation of chemical plants, and distributed booklets published by this company on "The Purchase of Coal," "Industrial Research in America," being a presidential address delivered before the American Chemical Society, at Rochester, N. Y., September 9, 1913, by Arthur D. Little, reprinted from the Journal of Industrial and Engineering Chemistry, for October, 1913, and on "The Industrial Resources and Opportunities of the South," being an address delivered before the American Chemical Society, at New Orleans, La., April 1, 1915, and the Atlanta Chamber of Commerce and Georgia Section of the American Chemical Society, at Atlanta, Ga., April 5, 1915. Arthur S. Little, Inc., announced in this exhibit that its laboratory, with its large and thoroughly organized staff of chemists and engineers, is equipped and prepared to undertake any work involving the application of chemistry to industry. "Its distinct purpose," continued the company's announcement, "is to secure to its clients increased industrial efficiency in material and processes."

Attractive and exceedingly interesting demonstrations of the use of "Celite" and "Celite" products, as well as of "Filter Cel" and "Sil-O-Cel," were made in the booth occupied by the **Kieselguhr Company** of American. Announcements at the back of this booth told that "Celite," a light weight mineral product, prepared as a filling material, is "used for filler for paint, filler for buttons, filler for rubber, for absorption, abrasives, disinfectants and sound deadening," while "Filter-Cel," used for filtration, "increases filtration of sugar solutions, vinegar, acids, oils, wines, extracts and fruit juices," and "Sil-O-Cel" prevents heat penetrations in boiler settings, hot blast stoves, gas generators, furnaces, soaking pits, coke ovens and bakers' ovens. A brick of "Sil-O-Cel" was constantly subjected to a blast of superheated flame from a blow-torch,

CHARLES H. ROTH,

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without manifesting the slightest on its sides not directly exposed to this blast.

The **Freeport Sulphur Company** and Parsons & Petit, dealers in general chemicals, as selling brokers for this company, exhibited samples of crude sulphur mined by the former corporation in Freeport, Texas, which were guaranteed 99.60 per cent. pure, having an average test of 99.80 per cent. to 99.96 per cent. pure, in an attractively arranged booth, in back of the main stairway, on the Lexington avenue side of the main floor. These companies' exhibits also included a section of sample sulphur core, showing the percentage of sulphur present, and a sectional view of core of sulphur-bearing rock taken from the Freeport Sulphur Company's mines, showing the sulphur in its native form.

A seemingly endless line of carborundum sharpening stones, razor hones and strops and abrasives was exhibited by the **Carborundum Compny,** of Niagara Falls, N. Y., which now makes 12,500,000 pounds of such products annually, with thirty of the largest and hottest electric furnaces in the world.

Samples of its copper, silver, gold, lead, spelter, cadmium, white arsenic and zinc dust and coal were shown to advantage in a booth maintained by the **United States Smelting, Refining and Mining Company.** This company announced in its exhibit that it buys copper, lead, zinc, silver and gold ores, matte and furnace products; refines blister copper, lead bullion and ore, and sells electrolytic copper, lead, electrolytic lead, antimonial lead, cadmium, special and prime western spelter, silver, gold, platinum, paladium, selenium, zinc dust, white arsenic, coal, hydrofluosilicic acid and hydrofluoric acid.

A glittering array of ammonia alum crystals, in the shape of a huge basket and forming the initials P. S. M. Co., instantly fascinated visitors as they approached the exhibit of the **Pennsylvania Salt Manufacturing Company,** manufacturers of heavy chemicals. Several large castings from pure sulphate of alumina were noted upon a closer examination of this display, which also included a miniature salt (sodium chloride) well derrick and a chess board made from kryolith in the Arctic Circle by a captain of one of this company's ships. Pillars of liquid chlorine formed the entrance to this concern's booth, which may well be described as unique.

Samples of seamless one-piece glass enameled apparatus for chemical factories constituted the principal exhibit of the **Elyria Enameled Products Company,** whose main office and plant are in Elyria, Ohio. Also included in this company's booth was the Elyria acid resistant enamel, which was described as "a true glass for chemical resistance, fused into steel for strength."

The **Electron Chemical Company,** Portland, Me., manufacturer of the Allen-Moore cell for the production of caustic soda, bleach and other chlorine products, had several of these cells on exhibition and in operation. The cell for the electrolysis of salt has undergone a long period of experimentation, and is now considered as reliable as the generator which furnishes the current.

The **Central Foundry Company,** 90 West street, this city, maintained a booth at the exposition for the edification of those interested in pipe lines, etc. The company featured its "Universal" pipe, used extensively throughout the country.

E. J. Codd Company, 700 Caroline street, Baltimore, Md., manufacturer of the Wiegand chain screen door for furnaces and ovens, places on exhibition several of their products. The chain door is used as a protection to the workmen from the terrific heat from ovens and furnaces in glass and chemical plants.

The **Coatsville Boiler Works,** main office and works, Coatsville, Pa., maintained space showing sketches, etc., of their stock tanks for storing oils, acids and other liquids.

H. Koppers Company, Pittsburgh, Pa., designers and builders of by-product coke and gas plants, tar distilling plants and ammonia recovering and concentrating apparatus, attracted keen interest by their exhibit of plans of factories equipped with "Koppers" machinery.

The **International Equipment Company,** 352 Western avenue, Boston, Mass., featured their commercial centrifugal extractors.

The **Lehigh Foundry Company,** Fullerton, Pa., with New York offices at 50 Church street, manufacturers of acid retorts, condenser castings, caustic soda pots, exhibited several of their products on the mezzanine floor.

The **United States Cast Iron Pipe and Foundry Company,** general offices Burlington, N. J., makers of cast iron pipe for chemical work, exhibited samples of their products, including alkali cylinders, soda pots and still castings.

The **Westinghouse Electric and Manufacturing Company,** East Pittsburgh, Pa., occupied a prominent position at the show, exhibiting electric appliances, graphic meters, motors, etc., used in connection with the chemical industry.

The **Downingtown Manufacturing Company,** East Downingtown, Pa., had in operation a miniature pulp beating plant, being an exact reproduction of the type used extensively in the paper mills. In conjunction with this exhibit the Empire Chemical Company maintained office space and distributed literature in connection with the recovery of resinous products from pine.

S. F. Hayward & Company, New York and Philadelphia, attracted interest by their exhibit of oxygen breathing apparatus used in mines, chemical works, oil works, etc. The exhibit included helmets, face and head protectors, respirators, goggles and reviving apparatus.

The **Multi-Metal Separating Screen Company,** of New York City, screening specialists, has on view several dust proof helmets and fine wire meshes used in the chemical industry.

The **Brunswick Refrigerating Company,** New Brunswick, N. J., maintained a booth for the dissemination of information on the subject of refrigeration by the ammonia compression system. The company specializes in the manufacture of refrigerating and ice making machinery.

The **Stuart & Peterson Company,** Burlington, N. J., iron founders and enamellers, showed samples of their products used in laboratory and experimental work.

The **Foote Mineral Company,** of Philadelphia, exhibited its various unusual ores and mineral products, including its antimony, barium, beryllium, calcium, caesium, cerium, chromium, fluorine, lithium, magmesium, manganese, molybdenum, strontium, tantalum, thorium, titanium, tungsten (Woldram), uranium, vanadium and zirconium, together with its zirbite ware, a refractory ware, made from zirkonite oxide.

J. H. Day Company, New York, manufacturer of mixing machinery and sifting apparatus, was an exhibitor on the mezzanine floor.

Rotary exaporators of special manufacture were exhibited by **F. Kleinschmidt & Company,** of Buffalo, N. Y.

Ernest Scott & Company, chemical process engineers, of Fall River, Mass., had on exhibition products made with "Scott" apparatus.

Geissinger Regulntor Company, New York, had on view and in operation several electrically operated temperature controllers.

The **International Equipment Company,** Boston, Mass., exhibited an elaborate line of general laboratory equipment.

The **Norton Company,** of Worcester, Mass., exhibited to great advantage its Norton alundun and crystolon refractories, made of materials mined and manufactured in the United States.

The **Butterworth-Judson Corporation,** New York, had an interesting display of finished chemicals, etc. The company distributed, as a souvenir, a booklet containing standard acid tables.

The **American Synthetic Color Company,** Stamford, Conn., manufacturers of fine organic chemicals and intermediates, was an exhibitor.

The **Fabra Company, Limited,** 29 Broadway, this city, exporters of chemicals and drugs, conducted a booth on the mezzanine floor.

The **Contact Process Company,** Buffalo, N. Y., formed in 1904 with a capital of $1,250,000, since increased to $1,500,000, for the manufacture of sulphuric acid and other heavy chemicals, had an interesting exhibit at the exposition.

The **Roessler and Hasslacher Chemical Company,** 100 William street, this city, conducted a booth for the distribution of data and general information regarding the many products manufactured by this concern.

Frank Hemingway, Inc., 82 Beaver street, New York, manufacturer, importer and exporter of industrial chemicals and coal-tar products, maintained a booth on the mezzanine floor.

The **United Dyestuff and Photo-Chemical Company, Inc.,** and the Williamsburg Chemical Company, Inc., of Brooklyn, N. Y., were exhibitors.

The **Hooker Electrochemical Company,** New York, with works at Niagara Falls, occupied a prominent position on the mezzanine floor of the exposition hall.

Harrison Bros. & Company, Inc., Philadelphia, manufacturer of chemicals, acids and pigments, exhibited samples of their products.

A. Klipstein & Company, 644 Greenwich street, New York, exhibited samples of coal-tar dyes produced in its own plants. The company also featured chemicals, tanning materials, oils and gums. Swiss dyes, made especially for A. Klipstein & Company also were shown.

Madero Brothers, Inc., New York city, had a well equipped office on the mezzanine floor of the exposition hall.

The **Mathieson Alkali Works,** Providence, R. I., occupied a booth for the display of chemicals, etc.

Crushing machines for all classes of work formed the basis of the exhibit of **Paul O. Abbe.** These machines were shown in different designs and sizes.

The **Mehling Instrument Company** and the **Mehling Laboratories** had an interesting exhibit with particular attention given to recording equipment and to fuel analysis.

A number of useful appliances were shown by the **American Apparatus Corporation.** Laboratory aprons, first aid kits and folding couches for hospital use were given prominent place.

Among the exhibits which were noteworthy from the number of articles on view was that of **Elmer & Amend.** This included many articles which are indispensable in the laboratory and in drug store equipment. Special attention was directed to electric furnaces with multiple replaceable units. This exhibit also is important as an index of progress in domestic manufacture, as many of the articles shown formerly were imported from Europe.

The **Thwing Instrument Company** had an exhibition of high resistance, multiple record pyrometers. The multiple recorders give as many as twelve easily distinguishable records on a single straight chart.

The **Precision Instrument Company** presented for inspection some recording and weighing machines which are the last word in registering minute amounts.

The **Bristol Company** offered an interesting exhibit of their goods. Delicate recording instruments and registering gauges were prominent in the display.

The **Dorr Company** had an attractive exhibit for all who are interested in chemical engineering. This company is noted as a producer of hydrometallurgical apparatus, and those in charge of the booth were kept busy explaining the apparatus on view.

COAL AND COKE BY-PRODUCTS.

The exhibit of its coal tar and chemical product departments made by the **Barrett Company** constituted one of the most complete expositions of the coal-tar chemical industry, as thus far developed in the United States, which was presented. Directly below the company's name at the back of its booth was emblazoned its trade-mark, "Barrett Standard," set forth in a circle, while on the shelves of a handsome glass cabinet were shown this company's Benzol, pure, 100 per cent., 90 per cent., 50 per cent.; toluol, pure, commercial and straw color; xylol, pure and commercial; solvent naphtha, crude solvent naphtha, Hi-flash naphtha, crude heavy solvent naphtha, No. 10 naphtha, heavy naphtha, pyridin, denaturing and commercial; pæacumaron resin, heavy solvent oil, shingle stain oil, special heavy oil and grade 2 thereof, neutral hydrocarbon oil, creosote oil, crude carbolic acid, 97 to 99 per cent. straw color, 95 per cent. dark, 50 per cent. first quality, 25 per cent. first quality, 15 per cent. first quality, 50 to 60 per cent. second quality, 25 to 30 per cent. second quality and 10 to 15 per cent. second quality; dip oil, phenol, U. S. P., natural and synthetic; para-amidophenol, creosol, U. S. P.; refined cresylic acid, No. 5; ortho-cresol, para-cresol, meta-cresol, xylenols, resorcin, technical; resorsinol, U. S. P.; salicylic acid, U. S. P.; sodium salicylate, U. S. P.; methyl salicylate, U. S. P.; salol, U. S. P.; salicylimide, naphthaline, flake, small balls, large balls, crushed, powdered, granulated, rice, lump, one-ounce cakes, square tablets, round tablets; cryst. alba, nitronaphthalin, alpha-naphthylamin, anthracin (crude), 25 per cent.; anthracin, 40 per cent. and 80 per cent.; carbazol, phenanthrin, pyzol, special cresol compound, tarola X, disinfecting powder and disinfectants, coefficients, 2 to 20. This company also had a display of its application of benzol and other lighter refined coal-tar distillates as solvents for rubber. These solvents, it was stated, find extensive uses in virtually all work connected with the rubber industry. Another display made by this company was an exhibit of benzol as a selective extractive for alkaloids, shown in the manufacture of strychnin sulphate, caffeine and hydroquinine, made by the Abbot Laboratories with the use of coal-tar distillates. An exhibit of mending and vulcanizing rubber, consisting of Para crude rubber in solution with benzol, and portions of automobile tires made with parts cemented with this rubber in solution, which had been furnished by the Firestone Tire and Rubber Company, was included in this Barrett Company booth, as well as artificial leather, made with the use of benzol, by the Pantasote Company. Samples of intaglio printing with intaglio inks, made by this company, in red, green, black, varnish light, yellow, brown and blue, which had been supplied by users of these goods, were also exhibited in this booth.

Principal coal-tar and numerous other chemical products were shown in the exhibit of **Merck & Co.,** of Rahway, N. J., and 45 Park place, New York city. A special display of Merck's Blue Label Reagents was also made in this exhibit. Among the coal-tar products shown in the Merck & Co. booth were paranitraniline, carbolic acid, sodium salicylate, salicylic acid, hydroquinine, aniline oil, acetanilid, barium sulphate, barium chloride, barium nitrate, barium carbonate, sodium sulphide and barium sulphide. A pamphlet on Merck's reagent chemicals, known as Merck's Blue Label Reagents, was also distributed to all visitors.

The **Chemical Company of America, Inc.,** 28 Platt street, New York, manufacturing chemists, specializing in coal-tar intermediates, was an exhibitor at the exposition. The company maintains factories at Springfield, N. J., and Jersey City, N. J.

The **United Gas Improvement Company,** Philadelphia, Pa., producers of benzol, toluol and other coal-tar derivatives, maintained a booth on the mezzanine floor, showing a line of its products.

The **Seydel Manufacturing Company,** Jersey City, N. J., manufacturers of high grade synthetics, textile chemicals and coal-tar derivatives, was an exhibitor.

The **American Coal and By-Products Coke Company,** 608 South Dearborn street, Chicago, Ill., owner of the Roberts Flueless Coke and Gas Oven, had on exhibition an interesting sketch of a modern by-products coke plant. Representatives of the company were present to give detailed information about the destructive distillation of coal.

The chemical display made by the **Thomas A. Edison Company** formed one of the most interesting exhibits for the student in the coal-tar chemical field, as the samples of this company's products were arranged from benzol and toluol bases in such a way as to show how each derivative in the coal-tar group was obtained from these hydrocarbons or from each of its predecessors. The chief products exhibited in that company's booth consisted of benzol, toluol, xylol, solvent naphtha, naphthaline, nitrobenzol, aniline, aniline salt, para nitroacetanilid, acetanilid, para phenylenediamine, acetyl phenylenediamine, para amidolphenol base, para amidophenol hydrochloride, phenol, benzidine base and benzidine sulphate. There were also shown sodium acetate, ferrous sulphate, iron oxide (red), mercury oxide, nickel flake, nickel sulphate, nickel hydrate, cobalt sulphate, cobalt hydrate and iron by hydrogen, grades A, B and C.

An extensive line of coal tar and other chemical products, made in its mammoth plant in Midland, Mich., was shown by the **Dow Chemical Company.** This exhibit, attractively arranged in a booth, included trichlorethylene, tetrachlorethane, bromoform, carbon tetrochloride, chloroform, hexachlorethane, methyl salicylate, salicylic acid, ethyl salicylate, oil of myrbane, potassium bromate, brom. chloroform, potassium bromide, gran.; sodium carbonate, ammonium chloride, potassium sulphate, magnesium chloride and sodium benzosulphonate.

The exhibit made by the **Monsanto Chemical Works** occupied a sizable booth, in which were shown in large jars its leading products in the coal-tar and other synthetic groups, including acetanilid products in the coal-tar group and other synthetics and chemical preparations, including acetanilid, acetphenetidin, caffeine (pure alkaloid), chloral hydrate, coumarin, the glycerophosphates (calmium, sodium, potassium, iron magnesium and manganese); phenol, U. S. P.; phenolphthalein, saccharin, vanillin, phthalic anhydrid and several of the intermediates in the coal-tar product industry, from which the above-mentioned finished goods are obtained. An attractive booklet entitled "The Modern Mirage, a Screed on Saccharin Sincerely Set Forth," by Elbert Hubbard, was distributed gratis from this booth.

"MADE IN AMERICA" DYESTUFFS SHOWN IN WIDE VARIETY AND INCREASED NUMBER

An exceptionally handsome display of the almost endless variety of coal-tar dyes and colors made by the **Schoellkopf Aniline and Chemical Works, Inc.,** of Buffalo, N. Y., and of textile fabrics, leather and food products dyed and tinted with that company's aniline colors was shown by the tastefully arranged booth of the National Aniline and Chemical Company, as the sole agents for the Schoellkopf company. The goods thus colored and dyed exclusively with American aniline colors manufactured by the Schoellkopf Aniline and Chemical Works included hosiery of all descriptions, woolens, cotton and silk fabrics, leather traveling bags and cases, pickles, olives and hard candies. The colors and dyes themselves embraced the fifty-three coal-tar dyes used in the textile trades and countless others employed in other industries. The entire exhibit was a work of art and merited the attention which was accorded it by all visitors.

A mammoth exhibit of its aniline dyes in glass jars and vials and of various descriptions of textile fabrics, leather, paper and other goods dyed with its American-made dyestuffs, produced from the coal-tar bases and other raw materials, constituted the principal feature of the large booth occupied by the **W. Beckers Aniline and Chemical Works.** Views of the Beckers plant and the number of its employes and extent of its output in 1910, 1911, 1912, 1913, 1914, 1915 and 1916 were shown to great advantage in handsomely framed pictures and charts on easels at the ring wing of this company's booth and served to demonstrate convincingly the gigantic strides which this concern has made in the production of virtually all the leading aniline dyes and colors since the beginning of the European war. The articles dyed with this company's beautiful dyes made a direct appeal to the eye of every visitor and caused him to stop and gaze further upon this colorful display. Chief among the coal-tar dyes produced in its plant in Underhill avenue, Brooklyn, were shown Victoria green, methylene blue, methyl violet, chrysoidine, Bismarck brown, fast red, B. R., acid red, A. R., azo yellow, green and reddish shades; acid yellow, oranges, 1, 2 and 3, and acid blue 1.

A handsome display of vegetable dyes and colors, guaranteed fast to light and fulling, which add 5 to 10 per cent. to the weight of the cloths in which they are used, was shown by the **Stamford Manufacturing Company.** These natural dyes and colors were exhibited chiefly in the woolen and cotton fabrics which had been dyed with these pigments and which were tastefully arranged on a table under a cluster of powerful electric lights and on a sample holder. This company makes a specialty of the different forms of logwood, logwood extract, solid logwood extract, hematine, hematine crystals and gambier extract.

The **Newport Chemical Works, Inc.,** and Newport Hydro Carbon Company, Newport Rosin and General Naval Stores Company, Milwaukee Coke and Gas Company, Northwestern Iron Company and Newport Turpentine and Rosin Company, made a joint exhibit of their products, in which they feature samples of "Newport" yellow, naphthaline, alpha, coal tar, xylol ortho, xylol meta, xylol para, naphthylamine, phenol, nitro naphthaline, gran.; nitro naphthaline, fused; nitro naphthaline, purified; bi-nitro naph., etc.

The **Swiss Colours Company, Inc.,** 15 East Twelfth street, New York, selling agents for the American Aniline Products, Inc., of Harrison, N. J., had on view a number of their products, which proved both interesting and instructive.

The **Franco-Swiss Dyes, Inc.,** New York, occupied space on the mezzanine floor.

The **Taylor Chemical Company,** of Penn Yan, N. Y., showed samples of its carbon bisulphide, made in its electric furnace, and the **Obex Laboratories Company,** of Marietta, Ohio, exhibited its dyewood extracts, as well as logwood and hematine, in a booth which also set forth the National Gum and Mica Company as the sole sales agents for these companies.

The **General Chemical Company** had an interesting exhibit of atmospheric nitrogen products, including synthetic nitric acid, synthetic sulphate of ammonia and aqua ammonia. This company also had on view a number of C. P. chemicals produced by Baker & Adamson for which the General Chemical Company is distributer. This also included a number of intermediates for use in dye making, which represents a comparatively new department in the manufactures of the company.

The **J. T. Baker Chemical Company** showed a line of "Baker's Analyzed Chemicals." They also distributed price lists descriptive of their chemicals and filter papers.

Marden, Orth & Hastings Co.

ESTABLISHED 1837

61 BROADWAY, NEW YORK CITY

225 Purchase Street, BOSTON, MASS. | 130 No. Fifth Avenue, CHICAGO, ILL. | 424 Rockefeller Building, CLEVELAND, O. | 316 Clay Stroet, SAN FRANCISCO, CAL.

CABLE ADDRESS
Artsoule, New York City — Grescent, Boston, Mass.

Exporters Importers Manufacturers Manufacturers' Agents

ACIDS

Sulphanilic Nitric Acetic Citric Sulphuric

CHEMICALS

Ammonium Nitrate
Barium Chloride
Bleaching Powder
Chloride of Lime
Caustic Potash
Bichromate of Potash
Carbonate Potash
Muriate Potash
Caustic Soda
Carbonate Soda
Bichromate of Soda
Sulphide of Soda
Sulphate of Alumina
Sulphate of Zinc
Sulphate of Copper
Sulphate Potash

DYES

DYE STUFFS AND INTERMEDIARY DYES

Aniline Oil
Aniline Salts
Dimethylaniline
Methylene Blue
Methylene Violet
Indigo
Nigrosine S
Nigrosine W
Aurantine
Hypernic
Hematine Extract
Logwood Extract
Logwood Chips
Borneo Cutch
Burma Cutch
Fustic Extract
Beta Naphthol
Azo Orange
Orange No. 2
Metanil Yellow
Acid Colors
Basic Colors
Direct Colors
Dyewood Extracts

OILS

Aniline
Cod Liver
Fish
Neatsfoot
Olive
Peanut
Soya Bean
Cocoanut
Corn
Lard
Mohlene
Olive Foots
Grape
Sperm
Cod
China Wood
Leather
Oleine
Palm
Rape
Whale

TANNING MATERIAL

Chestnut Extract
Hemlock Extract
Spruce Extract
Quebracho Extract
Larch Bark Extract
Sumac
Gambier
Borneo Cutch
Mangrove Bark
Mangrove Extract
Sod Oils
Degras
Moellons
Mohlene
Grease

MISCELLANEOUS

Glycerine Stearines Tannins

WIDELY DIVERSIFIED EXHIBITS ALONG GENERAL LINES OF CHEMICAL SCIENCE

An attractive exhibit of leather cloth, known as "Zapon," bearing a trade-mark and the words "The Sign of Quality," was made by the **Zapon Leather Cloth Company,** manufacturers of this article, in a tastefully arranged and decorated booth. Views of this company's factory in Stamford, Conn., five years ago and today, were also shown in this exhibit, while numerous samples of the goods were likewise placed to advantage in various parts of the booth, and pamphlets descriptive of the articles were distributed therefrom. These pamphlets stated that "the first artificial leather ever made was manufactured by the Evans Artificial Leather Company, who were succeeded by the Boston Artificial Leather Company, predecessors of the Zapon Leather Cloth Company," and that "the first artificial leather was made of gutta percha, while artificial leather of today is a pyroxilin coating on a cloth backing, which this interest originated and was the first to market." On benalf of "Zapon" leather cloth it is further contended that it "spells more than a generation of experience, means reliability, stands for durability and is the sign of quality."

Toch Brothers' exhibit consisted principally of its dryers for use in various paints, including both resinates and borates; its dry cement colors, which can be mixed with cement or with mortar and sand, and its "Liquid Konkerit," used for coating or painting cement. This exhibit also embraced the Toch laboratory enamel, which resists acid and sulphuric fumes, and its black paint specialty, known as R. I. W. (Remember it's Waterproof), whose special property it is that it protects iron and steel against further rusting and dampness corrosion after these metals have begun to rust, and Tocholith, paint preventive of rusting in steel. Several samples of barium salts were also shown in this exhibit.

The **General Bakelite Company,** of 100 William street, New York city, featured in its exhibit the product from which it took its name, "Bakelite," a synthetic condensation product of phenol and formaldehyde, produced by a patented chemical process in which phenol and formaldehyde react upon each other and form a material having the characteristics of a resin. This synthetic gum or resin, known as raw "Bakelite," is both soluble and fusible, but has the unique property of becoming insoluble and infusible when subjected to heat. This product was exhibited in the forms of moulding mixtures, for electrical insulation and impregnation; lacquers, for highly finished metal; protective enamels, of chemical resisting character; and cement, for technical purposes as well as sound, transparent and colored cements for fancy and ornamental purposes.

The **Detroit Range Boiler Company,** of Detroit, Mich., exhibited its Perfect Metal Bilge Barrel, with several samples, showing its full draining bung, which is described as "the only bung in a metal barrel that drains the inside clean," and has no shoulder or projection on the inside, and which is also said to be "the only perfect removable head metal barrel manufactured." Among the samples which this company showed were its "Perfect" metal bilge barrel, equipped with patented full draining side bung; the same galvanized and black, the same with agitator equipment, the same with superimposed wooden head, for alcohol shipments requiring Internal Revenue branding; the same with lead plate attached, for shipments of denatured alcohol which must pass Internal Revenue inspection; its Detroit drum, with expanded and extra rolling hoops, and its "Perfect" relief plug, as well as sections of the bilge barrel showing details of open head closure.

Numerous samples of lead lined and tin lined iron pipe, fittings and valves, made by the **Lead Lined Iron Pipe Company,** of Wakefield, Mass., were shown in an interesting manner by that company. In this exhibit, particular attention was directed to the fact that this concern's "Flanged Lead Lined Iron Pipe" can be used for acids, salt water or any corrosive liquids and that its joints are made so that lead touches lead; also that its "Tin Lined Iron Fitting" has half of its threads made of tin, recessed into the iron so that there can be no corrosion in the fitting, and that its "lead lined iron stop cocks have acid-resisting bronze plugs, either screwed or flanged."

H. Reeve Angel & Company, Inc., of 130 Liberty street, this city, had on exhibition the well-known Whatman filter papers, manufactured by W. and R. Balston, Ltd., Maidstone, England, makers of the famous hand-made Whatman drawing papers. The filter papers produced by this firm are of the highest grade, meeting the most exacting requirements of the industrial and analytical chemist. Demonstrations conducted at the booth under simple laboratory conditions proved that the filter papers are of unusual merit as to speed, retentiveness and general dependability. A gelatinous precipitate, produced by barium chlorate plus copper sulphate, showed almost immediate filtration through a single sheet of Whatman's number 40 filter paper. The makers claim that the papers are not only equal to but superior to those made on the Continent, and up to a short time ago used exclusively in America. Whatman filter papers are made of the purest material and are virtually "ashless."

The **Prest-O-Lite Company, Inc.,** Indianapolis, Ind., exhibited "Prest-O-Lite" outfits, suitable for lighting, welding, etc.

Whitall Tatum Company, New York, manufacturer of chemical glassware, made a specialty of "Nonsol" glass, a product known for its resistance to the action of chemical reagents and its non-corrosive qualities.

The **Corning Glass Works,** Corning, N. Y., makers of technical glassware, had on exhibition of their products, including chemical glassware, cylinders, light filters, tubing and X-ray shields.

Herman A. Holz, 50 Church street, this city, manufacturer of the "Brinell Meter," had on view one of these instruments used for the determination of the "Brinell Hardness" of metals and metal products, independent of their dimensions, shape and location.

The **Alberene Stone Company,** 223 East Twenty-third street, this city, quarriers and finishers of sanitary stone, used in laboratories, etc., erected a complete stone-lined laboratory outfit in their booth.

The **Herold China and Pottery Company,** Golden, Colo., exhibited chemical and scientific porcelain bearing the trade mark "Coors."

The **Pyrolectric Instrument Company,** 148 East State street, Trenton, N. J., exhibited the "Northrup" pyrovolter, a new instrument with a new principle for use with thermocouples in the accurate measurement of temperature.

The **Taylor Instrument Companies,** Rochester, N. Y., makers of thermometers for all purposes, barometers and other meteorological instruments, had an exhibit showing many of their products.

The **Foxboro Company,** Foxboro, Mass., with a branch office at 50 Church street, had on view at its booth on the mezzanine floor, a line of instruments for power plants, chemical factories, etc.

The **Brown Instrument Company,** Philadelphia, Pa., exhibited various electric pyrometers manufactured by this company.

The **Bausch & Lomb Optical Company,** Rochester, N. Y., occupied a prominent position on the mezzanine floor with its exhibit of metallographic apparatus, microscopes, etc.

The **B. Mifflin Hood Brick Company,** Atlanta, Ga., had on view samples of brick products used in connection with the chemical industry.

The **Raymond Bros. Impact Pulverizer Company,** manufacturer of pulverizing and separating machinery, exhibited samples of air separated chemical products.

The **Mississippi River Power Company,** Keokuk, Iowa, presented interesting data on the possibilities of establishing chemical plants in the Middle West.

The **Tennessee Power Company,** Chattanooga, Tenn., maintained a booth to interest manufacturers in the erection of plants in the South.

The **Corn Products Refining Company,** New York, made an interesting showing by exhibiting many samples of its many products, including starches, dextrines, corn sugar, etc.

Process Engineers, Ltd., manufacturer of sizing for paper mills, was represented on the mezzanine floor of the exhibition hall.

The **General Electric Company,** makers of machinery used extensively in the chemical industry, maintained a booth on the mezzanine floor.

F. C. Huyck & Sons, Albany, N. Y., presented samples of felts employed in the manufacture of chemicals, etc.

The **Denver Fire Clay Company,** Denver, Colo., exhibited metallurgical furnaces and chemists' supplies made from fire clay.

"American Dyes for American Dyers" was the wording of a sign over the booth of **Marden, Orth & Hastings Company.** This company showed an interesting line of their own dyes and dye products, including sulphur black, sulphur brown, analine oil, aniline salts, azo orange, naphthol, nigrosene, paranitraniline, etc. They not only showed the materials but also different fabrics which had been dyed with their materials.

The **Benzol Products Company** was one of the first companies to enter into the home development of dyes and dye materials since the war. Consequently their exhibit was of unusual interest to members of the dye and kindred trades. Among the articles shown were nitro benzol, aniline, dinitro benzol, sulphanic acid, metanilic acid, nitro toluol, toulidines, nitro xylol and xylidines.

The exhibit of the **E. I. Du Pont de Nemours Company** was subdivided so as to show the products of the Du Pont Chemical Works, Du Pont Fabrikold Co., Fairfield Rubber Company, and the Arlington Company. The exhibit included high explosives, powders, chemicals and mixtures for industrial, medicinal and laboratory uses, materials for furniture and vehicle upholstery and waterproofing materials.

The **Solvay Process Company** devoted considerable space to views of their factories and to explanations of the methods used in turning out their products. This was followed up by exhibits of their own manufactures, comprising soda ash, caustic soda, bicarbonate of soda, modified sodas, causticized ash, crown filler, calcium chloride, salt and limestone.

As exemplifying the advancement made in the past two years in the domestic manufacture of coal-tar dyes and intermediates, particular mention may be made of the products shown by the **Standard Aniline Products, Inc.** Among the dyes shown by this concern were sulphur black, sulphur brown, fur black, fur brown, sulphur blue, bismarck brown, chrysoidine, wool yellow, wool orange, fast scarlet, and green crystals.

The **Metallic Disintegrating Company, Inc.,** 3 South William street, this city, attracted attention by its samples of metallic powders, which included zinc, tin, lead, aluminum, copper and magnesium. The zinc dust, which was of 350 mesh, analyzed 97.30 per cent. metallic zinc, .05 per cent. moisture and 2.75 per cent. zinc oxide.

The **Richmond Waterproof Products Company, Inc.,** 30 Church street, this city, has on exhibition specimens of the work done with "Monarch" damp and waterproof cement.

The **Golden Chest Mine,** New York, exhibited samples of tungsten ore obtained from its properties.

E. R. Squibb & Sons featured a line of analyzed reagents and test solutions. They also had on view volumetric solutions, indications and test papers. A feature of their exhibit was the distribution of samples of their talcum powder.

A good idea of the various uses to which condensite is put was given in the display of the **Condensite Company of America.** The use of this material for insulating purposes was especially well established by the variety of finished products into which it entered.

The **De Laval Separator Company** showed a number of their machines ready for operation, together with the various uses to which they might be put.

The **International Glass Company** had a display of a varied line of glass tubing, chemical apparatus and laboratory glassware.

Semi-rare metals were included in the display of the **Raritan Copper Works.** Among these were selenium and tellurium, which are by-products of the copper industry.

Stoneware for almost every conceivable commercial purpose was shown in the booth of the **German-American Stoneware Company.**

The **United Lead Company** offered an exhibit which in one feature, at least, was out of the ordinary. Prominent place was given to a piece of lead pipe which was described as being more than 2,000 years old. The different lead products as turned out by this company also were on display.

The **Industrial Filtration Corporation** exhibited their open tank filter and working models of a rotary filter.

E. B. Badger & Sons Company, manufacturers of chemical plants, had a well equipped booth where different types of machines and machinery for equipping chemical factories were shown.

The **Sweetland Filter Press Company** occupied quarters directly in front of the general entrance to the hall. The display consisted mainly of their self dumping filters and metallic filter cloth.

Schaeffer & Budenberg Manufacturing Company had an interesting and varied assortment of thermometers and indicating gauges.

Among the large exhibitors of machinery for various purposes was the **Bethlehem Foundry and Machine Company**

The **Leeds & Northrup Company** showed an extensive line of resistance boxes, portable testing sets, portable galvanometers and resistance thermometers.

The **Schutte & Koerting Company** had on exhibition an automatic blowcase for lifting liquids. This is said to have an extensive use in the elevation of chemical solutions.

Crushing, grinding, screening, sacking, weighing and mixing machinery featured the display of the **Sturtevant Mill Company.**

The **Hardinge Conical Mill Company** presented a comprehensive display of their conical ball and pebble mills. These machines have been produced as a result of thirty years' experience in designing and operating ore-treating plants and are noted for the fact that they do the work formerly done by different machines.

The **Carrier Engineer Corporation,** which is responsible for the Carrier system of humidifying as applied to textile mills, had their booth arranged so as to demonstrate the workings of this system.

The **Great Western Silica Company,** Tacoma, Wash., showed samples of silica at their booth.

The **Mine and Smelter Supply Company,** New York, exhibited clay goods used in the manufacture of chemicals, a Linsay oil furnace and assay balances.

The **Atlantic, Gulf and Pacific Company,** New York, engineers and contractors, maintained a bureau for the purpose of interesting chemical manufacturers in establishing plants at its latest development, known as "Mill Basin," located on the shore of Jamaica Bay, Long Island.

The **National Enzyme Company, Inc.,** Clifton, N. J., a subsidiary company of the Takamine Laboratory Corporation, manufacturers of malt products, yeast and protein feed, was an exhibitor at the exposition.

Charles F. Garrigues Company, 80 Maiden Lane, New York city, sole selling agents for the Virginia Smelting Company, West Norfolk, Va., producers of liquid sulphur dioxide So-2, occupied a prominent location at the show, featuring this chemical product. Liquid sulphur dioxide is now being produced in America by the Virginia company for the first time. It is used in bleaching, etc.

Pure fused silica, a substitute for platinum and other high cost substances used in scientific and technical high-temperature work, was exhibited by the **Sidio Company of America, Inc.,** of 752 Broadway, New York.

The chemical department of the **Nash Engineering Company,** South Norwalk, Conn., had samples of "Xyloform," a wall paint which may be washed.

The **Universal Fibre Company,** Trenton, N. J., exhibited samples of its seamless pulp packages, containers and shaped articles, manufactured direct from the pulp.

The **Luzerne Rubber Company,** main office and works Trenton, N. J., manufacturer of hard rubber products, standard and special, had on exhibition several of its products.

PROF. J. ALLEN ROGERS,

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Chairman of the Publicity Committee, American Chemical Society.

Chas. Pfizer & Co., Inc.

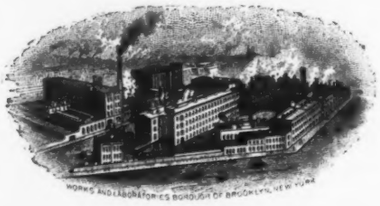
Established 1849

Manufacturing Chemists

NEW YORK

Cream Tartar	Refined Camphor	Calomel
Tartaric Acid	Citric Acid	Corrosive Sublimate
Rochelle Salt	Chloroform	Red Precipitate
Seidlitz Mixture	Potassium Iodide	Strychnine
Borax	Tannic Acid	Iodine
Boric Acid	Bismuth Subnitrate	Iodoform

Also a general line of Chemicals for Medicinal, Photographic, Blue Print and other Technical Purposes.



WORKS AND LABORATORIES BOROUGH OF BROOKLYN, NEW YORK

Aniline Oil
Aniline Salts
Dimethylaniline
Sulphanilic Acid
Ammonium Nitrate
Barium Nitrate
Barium Chloride
Blanc Fixe

OUR OWN MANUFACTURE SUPERIOR QUALITY GUARANTEED

Marden, Orth & Hastings Co.

61 Broadway **New York City**

Cable Address—Crescent, Boston **Artsoule, New York**

"BUFLOVAK" EVAPORATORS

For successful and economical concentration of solutions by evaporation, the important features to be considered are the following:—

Mechanical strength, quality of material and thickness of metal used for all important parts.

Uniform circulation of the boiling liquid in order to prevent coating of the tubes.

Proper distribution of the steam over the whole heating surface.

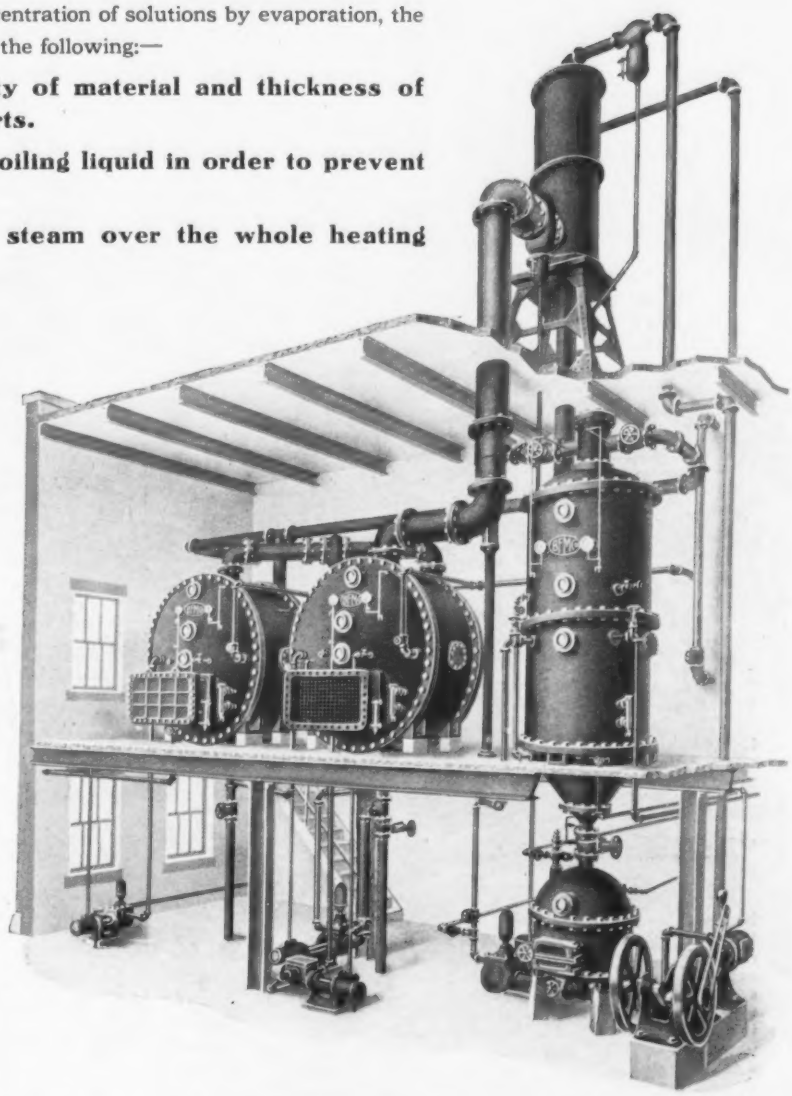
Proper proportions of the evaporator so as to avoid losses by entrainment and foaming.

Possibility of increasing the capacity of the evaporator without being forced to buy an entirely new apparatus.

Simple construction so that the equipment can be operated and if necessary repaired by unskilled labor.

Lastly, the price, which should only be considered after all other points have been settled satisfactorily. A "cheap" evaporator is most of the time very expensive on account of liquor losses and frequent repairs.

All evaporators can meet some of the points, but only the "BUFLOVAK" Evaporator meets ALL points.



"Buflovak" Horizontal Tube Evaporator

This evaporator is designed to meet the most rigid requirements and fulfill the above specifications without increasing the price to such an extent that it cannot be used for liquors which must be handled at low cost. It is so constructed that the evaporator body will resist any inside or outside pressure without the necessity of excessive wall thicknesses, the number of joints, and, therefore, the chance for leakage is less than in any other type as the cylindrical shells are made in one piece up to a length of 16 feet.

The "Buflovak" H. T. Multiple Effect Evaporator is built in any size up from 500 square feet heating surface; for any kind of liquid and of any material suitable for the construction of such apparatus. We also build smaller evaporators, having an oval shell with heating surfaces down to 36 square feet.

"Buflovak" Vertical Tube Evaporator

Where the liquors to be evaporated contain salts which become insoluble during the concentration, it is important to remove the salts from the boiling zone as quickly as possible in order to avoid the trouble and delay caused by the coating of the tubes with salt crystals.

The type most suitable for this kind of work is the Mantius Crystallizing Evaporator which has become the standard for all electrolytic alkali liquors.

"Buflovak" V. T. Multiple Effect Evaporators are built in any size and of material suitable for their construction.

"Buflovak" All Cast-Iron Evaporator

Built with vertical tubes made of our special grade of cast iron for the purpose of concentrating liquors which will destroy charcoal-iron or copper tubes in a short time. This type can also be arranged for the separation of salt crystals.

We also build Condensers, Vacuum Pumps, Receivers, Salt Filters, Pre-heaters, etc.

Buffalo Foundry & Machine Co.

4 Winchester Ave., Buffalo, N. Y.

NEW YORK OFFICE: 17 BATTERY PLACE

"BUFLOKAST"

The striking development of the chemical industry in America has brought forcibly to the front the service rendered by this Company in making it possible for American manufacturers to better meet the many new problems, as a result of the war, that confronted them.

An important feature of this work was the ability to furnish Chemical Apparatus and COMPLETE CHEMICAL PLANTS for producing Heavy Chemicals, Acids, Alkalies, Organic Chemicals, High Explosives, Coal-Tar Colors, and kindred products, these plants being designed, constructed and operated (under guarantee where desired).

We mention below some of the materials whose satisfactory production can be assured by using the "Buflokast" Equipment designed for the particular product to be manufactured.

Aniline	Para-Phenylenediamine
Toluidine (Ortho and Para)	Meta-Toluylenediamine
Xylidine	Meta-Nitraniline
Para-Amido-Phenol	Para-Nitraniline
Dinitrochlorbenzol	Acetanilide
Nitrobenzol	Amidoazobenzol
Nitro-toluol	Dimethylaniline
Metanilic Acid	Carbolic Acid (Phenol)
Sulfanilic Acid	Picric Acid
Meta-Phenylenediamine	Sulfur Black

Alpha-Naphtylamine

Alpha-Naphtylamine-sulfonic acids, such as Naphtionic acid, Laurent acid, Dahl acids,

Freund Acid — Alpha-Naphthol,

Alpha-Naphthol-sulfonic acids, such as Neville-Winther acid and Cleve acid,

Beta-Naphthol — Beta-Naphthol-sulfonic acids, such as Schaeffer acid, R, G, & F acids,

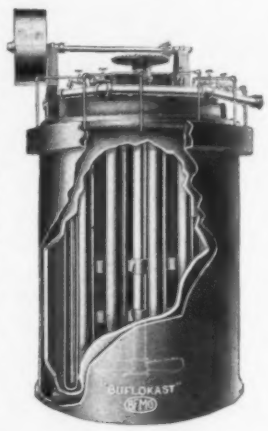
Amido-Naphthol-sulfonic acids, such as H acid and Gamma acid.

Individual Pieces Also Furnished

Where an entire chemical plant is not desired, we can supply any section of the same or individual pieces of apparatus for all chemical operations, such as nitration, sulphonation, reduction, chlorination, caustic fusion, etc.

The chemical apparatus and complete plants mentioned below are built in various sizes to suit any capacity desired. Space does not permit mention of all sizes.

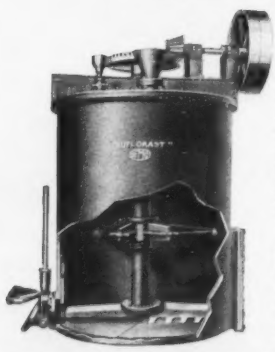
"Buflokast" Nitrator



This apparatus is noted for its high yield. A special feature of the large size (illustrated) is the series of closed end tubes, providing exceptionally quick cooling facilities, especially in the center. These tubes are individually controlled, the temperature of the overflow from each tube being regulated by a separate valve. The use of these tubes is made possible by our patented method of casting the tubes without chaplets, thus insuring freedom from leaks. This is the only successful method so far devised for manufacturing these tubes.

Other features are ball bearings, special semi-steel cut gears, large factor of safety, etc.

"Buflokast" Reducer

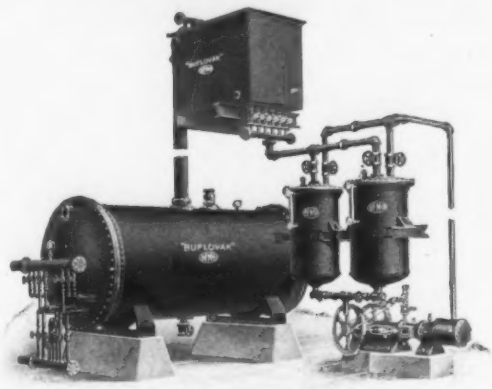


Especially noted for its large output, ease and cleanliness of operation. The bottom and lower portion of sides are lined with special quality liner plates which are readily removable and can be renewed as occasion requires. The side plates are reversible so that the upper portion of the plate can be used when the bottom portion has become worn.

Other features are the improved unloading device, which automatically raises the valve when opened, and wedges it in position when closed; semi-steel driving gears, large factor of safety, etc.

Where a reducer with higher heating facilities is desired we furnish a jacketed type.

"Buflovak" Vacuum Still



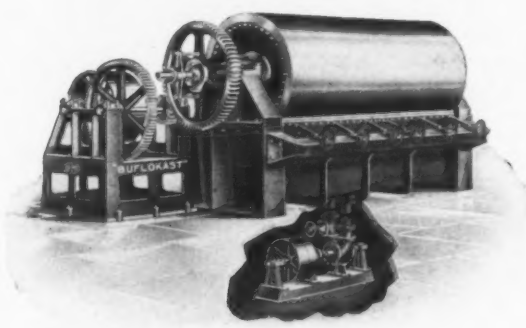
Constructed of heavy steel plate and provided with heating coils in the bottom of the still. These stills—furnished in various sizes, either horizontal or vertical—are built in accordance with the high standards of our other vacuum apparatus. Their design has been worked out with exceptional care as to details.

"Buflokast" Sulphonator

The "Buflokast" Sulphonator is especially heavy and durable. On account of the action of the acids commonly treated in the kettle a special quality of metal is used in the construction of the apparatus.

This apparatus which is noted for its efficiency and durability, is built in a variety of sizes as required.

Atmospheric Drum Dryer



The patented successful principles of operation in this dryer are the cause of its exceptional success. It embodies the principles of the famous "Buflovak" Vacuum Drum Dryer and is used for drying many liquid materials which do not require a vacuum, such as sodium-benzol-sulphonate, sodium-acetate, etc.

Our patented automatic device for applying the liquid to the drum produces a uniform coating on the drum and consequently a uniform dry product. The scraper or knife is adjusted to the drum by a special device—controlled by a series of handwheels—which permit the most accurate and delicate adjustment.

Buffalo Foundry & Machine Co. *4 Winchester Ave.* *BUFFALO, N. Y.*

MICAL PLANTS

"Buflokast" Fusion Kettles

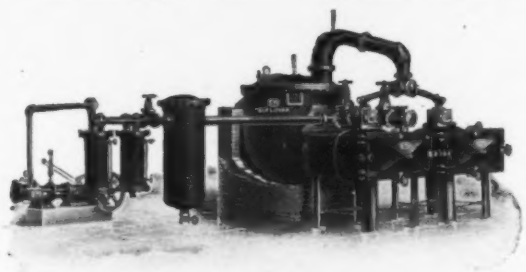
The important feature about "Buflokast" Fusion Kettles is the fact that they are made of the same quality of metal used successfully for so many years in the manufacture of our caustic pots. This mixture of metal is designed to combat or resist the combined action of the caustic and the temperature to which the kettles are usually subjected.

"Buflokast" Caustic Pots

Widely known throughout the chemical industry. With few exceptions, all the caustic pots now used are "Buflokast". The success of these pots is clearly indicated by rsports from our customers showing that they give from three to five times more service than those purchased elsewhere, either in this country or abroad.

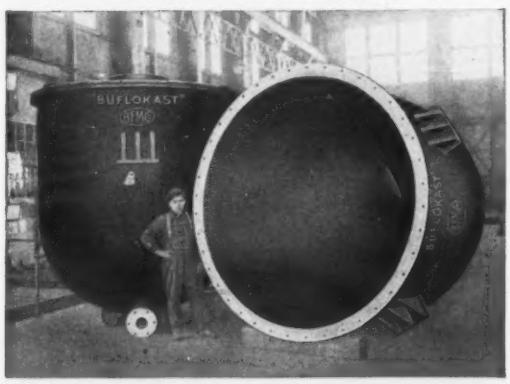
Built in varying sizes up to the capacity of the railroad companies to handle them.

"Buflovak" Beta-Naphthol Still

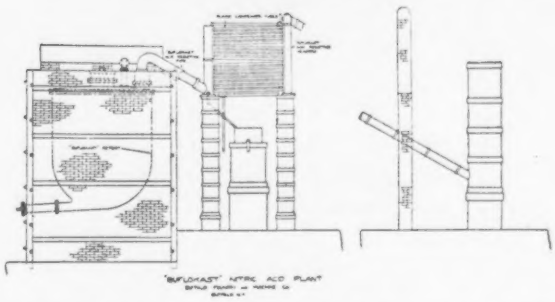


Judging by reports from users, the "Buflovak" Beta-Naphthol Still is doubtless the most successful still for the purpose now in use. It overcomes the difficulties encountered in Beta-Naphthol distillation, especially in subliming, and vapors are prevented from passing to the vacuum pump.

"Buflokast" Nitric Retorts



Heavy Chemicals, Acids and High Explosives

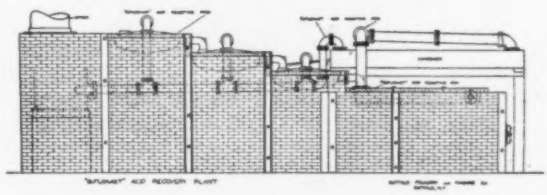


A significant point about "Buflokast" Equipment in this particular field is the fact that "Buflokast" plants are used by a majority of the largest manufacturers of high explosives in the United States to-day.

We furnish complete plants or individual pieces of apparatus for producing nitric, sulphuric and hydrochloric acids; Trinitrotoluol and other products in the same field.

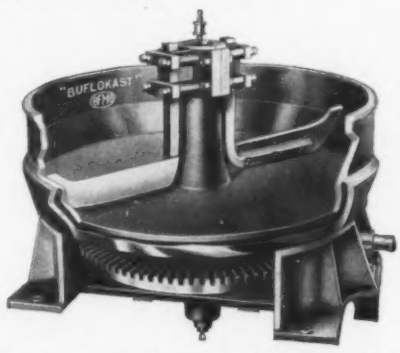
The above etching shows the latest practice in nitric acid manufacture. It is noted for its efficiency and economy and is conceded to be by far the most satisfactory method of manufacturing nitric acid. The special type retorts here indicated are more fully shown in the preceding column. These special retorts, which are furnished independently of the complete plant, when desired, are being used by most of the high explosive companies and other manufacturers of nitric acid. They are furnished in the vertical and horizontal types in various sizes as required.

"Buflokast" Recovery Plant for Sulphuric and Nitric Acid



This plant eliminates the use of steam for the separation of acids, consequently no water is added to be again evaporated. The cascade system is used, the acid being run through special "BUFLOKAST" covered concentration pans. Nitric fumes are driven off and recovered when desired in absorption towers; the sulphuric acid is recovered from the cascades. NO OBJECTIONABLE FUMES. The **low cost** at which concentration and separation are accomplished by this plant will interest you.

Crystallizing Pan



An efficient apparatus for concentrating and crystallizing materials permitting high temperatures. It is used almost exclusively in this country for evaporating the neutralized liquor of ammonia and nitric acid and drying and crystallizing the finished product.

We also furnish a vacuum crystallizer embodying the same principles as the above except that it is operated under a high vacuum thus permitting the handling of more delicate materials on account of the lower temperatures employed.

Other Apparatus

Other "Buflokast" Apparatus includes Autoclaves for high and low pressure, constructed of cast-steel, bronze or cast-iron, with and without outer jackets and interior stirring devices; Reflux Condensers; Phenol (Carbolic Acid) Stills; Acid Eggs, Hydrochloric Pans; Acid-Resistant and other Special Chemical Castings.

Buffalo Foundry & Machine Co. *4 Winchester Ave.* *BUFFALO, N. Y.*

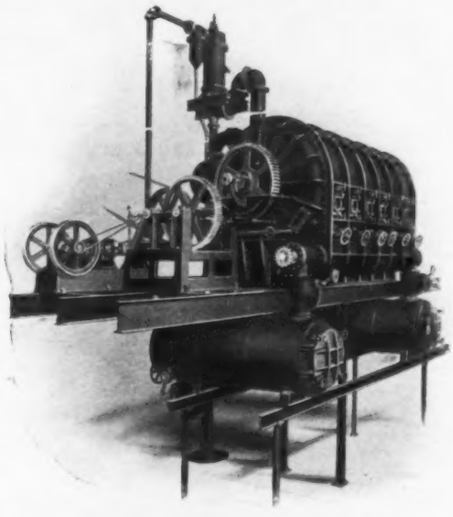
"BUFLOVAK"
Vacuum Drying Apparatus

In "Buflovak" Vacuum Drying Apparatus, we present an economical, safe and positive means for drying all classes of materials. Materials that would be injured by excessive heat or can be dried otherwise only at prohibitive cost may be dried economically in "Buflovak" Dryers. An extremely low temperature is assured by the maintenance of a high vacuum in the apparatus. The drying is done very rapidly, and materials can be dried in a few hours that otherwise would require days or weeks.

"Buflovak" Vacuum Dryers are also far more economical because of the extremely low operating cost and quick drying time. They enable the manufacturers to obtain an improved quality in the dried product. The low temperatures at which materials can be dried in "Buflovak" Dryers permit the drying of many materials without injury or danger of overheating that cannot be satisfactorily dried by any other method.

"Buflovak" Dryers are built for all materials and to suit any capacity desired.

Vacuum Drum Dryer

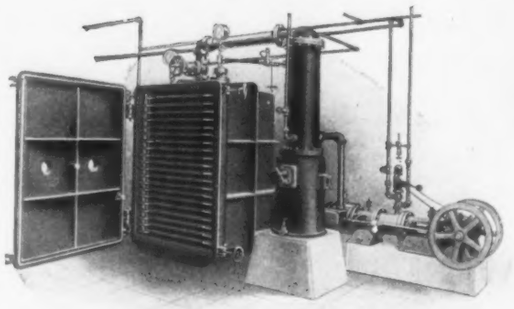


The ideal apparatus for converting liquids into a dry or powdered form. It is used for drying solutions, emulsions and pulps, such as DYEWOOD EXTRACTS, QUEBRACHO, WHITE LEAD, GLUES, MILK, ACIDS, CHEMICALS, and other liquids containing solids.

While the Vacuum Drum Dryer has in theory been considered the ideal apparatus for drying liquids containing solids, satisfactory commercial results were not attained until our patented devices and methods for applying the liquid to the drum were perfected.

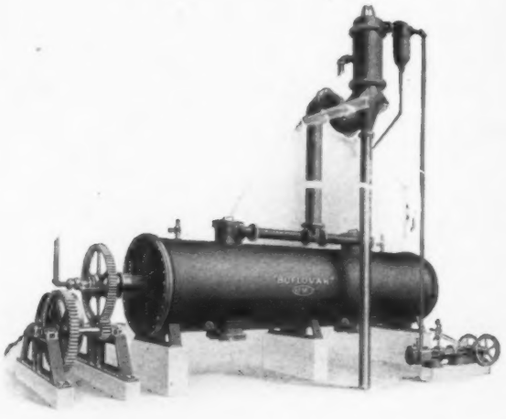
The "Buflovak" Drum Dryer enables the most delicate liquid materials to be converted into dry form at extremely low temperatures — thus removing all danger from overheating — and at a very low cost of operation. In most cases the dried material is delivered as a powder, thus eliminating grinders.

Vacuum Shelf Dryer



For drying materials to be handled in pans or trays. In "Buflovak" Shelf Dryers the body of the dryer, even on the largest sizes, is made in ONE PIECE, thus eliminating the numerous joints found in other types, and insuring the maintenance of a high vacuum. Another feature is the special grade of dense iron used, made in our laboratory-controlled foundry by special process. This also assists in maintaining the high vacuum for which these dryers are noted. Built in sizes to meet any capacity desired.

Vacuum Rotary Dryer



Used for materials that can be mixed or tumbled. Interior contains revolving heating tube with mixing arms and paddles attached. Jacketed shell is made of lapwelded steel tubing, a distinctive feature of the "Buflovak" dryer. This allows paddles to be set closer to shell than in the welded or riveted steel plate construction, thereby obtaining a higher efficiency. Built in many sizes.

Other Vacuum Apparatus

The "Buflovak" line also includes Vacuum Drying and Impregnating Apparatus and a complete line of auxiliary apparatus, such as Dry Vacuum Pumps, Barometric and Surface Condensers, Expansion Tanks, Solvent Reclaiming and Deresinizing Apparatus, etc.

We also build to order special apparatus to meet special requirements.

Buffalo Foundry & Machine Co.

4 Winchester Ave., Buffalo, N. Y.

NEW YORK OFFICE: 17 BATTERY PLACE

Summary of Important Dyestuffs Imported to Beginning of War

Tabular Summary Covering Amounts and Varieties of Aniline Colors Imported Into This Country During the Fiscal Year 1913-1914, Just Before the European War.

FIRST PRESENTATION OF THIS DATA BY DR. NORTON BEFORE THE CHEMISTS

The Oil, Paint and Drug Reporter, in its issue of September 25, 1916, on page 74, printed a summary of the first census of dyestuffs to be published by the United States Government within the next few weeks, as prepared by Thomas H. Norton, Ph.D., of the Bureau of Foreign and Domestic Commerce. This material was embodied in the address delivered by Dr. Norton at the session of the American Chemical Society the past week, and will not be republished, as it can be found on page 74 of last week's issue, as stated. Dr. Norton, however, did present, in addition to the summarization of the Census Report, the following tabular summary of the most important colors imported during the year 1913-1914, which is printed here complete for the first time. Further material from this report will be published in forthcoming issues of the Reporter.

SUMMARY OF THE MOST IMPORTANT COLORS IMPORTED.

For the convenience of those studying the problem of dyestuff manufacture in its broader phases, the following summary of the more important synthetic colors currently imported into this country has been compiled from the complete list enumerated in the census, now in press, and to be ready for distribution during the month of October. It includes practically all the colors, the annual importation of which during the fiscal 1913-1914 exceeded in amount 10,000 pounds. These colors for the sake of classification are divided into six groups, according to the amount of the importation. The abbreviation V. M. denotes "various marks." The serial numbers employed correspond to those found in Schultz's "Fachstafftabellen" (edition of 1914). Numbers preceded by letters refer to colors regarding the manufacture and chemical composition of which little or nothing is known. Azo dyes in this category are indicated by A, sulphur colors by S and other dyestuffs of unknown composition by U.

Class I.

Serial No.	Commercial name.	Pounds.	Invoice value.
462a	Direct deep black E...	862,601	$110,009
A46	Zambesi black (Y. M.).	629,359	107,669
720	Sulphur blacks (Y.M.).	5,615,458	558,909
874	Indigo, synthetic	8,507,359	1,090,773

Class II.

Serial No.	Commercial name.	Pounds.	Invoice value.
333	Oxamine black	417,422	$57,464
403	Auramine	449,276	107,887
842	Indanthrene blue G. C. D.	478,980	169,780

Class III.

Serial No.	Commercial name.	Pounds.	Invoice value.
274	Diaminogen	305,944	$30,201
275	Diamond black.....	351,582	55,020
363	Benzopurpurine 4B....	341,724	45,233
A396	Cotton Black (Y. M.)..	300,473	44,567
A432	Lake red (Y. M.).....	349,380	11,682
700	Nigrosine, sol. in water	394,718	58,903
803a	Alizarine blue (Y. M.).	302,319	69,712

Class IV.

Serial No.	Commercial name.	Pounds.	Invoice value.
7	Naphthol yellow.....	250,409	$24,702
23	Tartrazine	265,781	53,137
134	Metanil yellow	284,606	46,614
157	Diamond black	285,047	37,055
173	Lithol red R.....	214,448	18,550
174a	Scarlet	200,281	20,472
308a	Paper yellow (V. M.)..	264,443	45,320
436	Columbia black	290,902	41,563
463	Cotton Black E.....	248,567	54,602
515	Methyl violet	255,063	63,183
536	Alkali blue	286,531	117,465
748	Hydron Blue (G. R.)..	292,729	35,555
778	Alizarin (synthetic)....	202,392	20,465
806a	Alizarin black (V. M.).	229,500	23,275

Class V.

Serial No.	Commercial name.	Pounds.	Invoice value.
34	Chrysoidine	105,946	$16,852
48	Alizarin yellow	144,761	11,118
145	Orange III.....	127,550	10,116
163	Azo rubine	160,252	23,409
181b	Salicine black (V. M.).	177,206	26,945
183	Eriochrome black T...	129,550	23,447
217d	Naphthylamine black (V. M.)	122,581	12,240
217f	Acido black (V. M.)...	105,005	10,062
220	Palatine black	148,203	15,169
220b	Wool black (V. M.)..	110,244	16,868
227	Brilliant croceine	123,058	20,333
257	Sulphon cyanine	128,944	21,118
266	Naphthylamine black..	152,141	21,903
266a	Naphthol black (V.M.)	131,890	19,436
284	Bismarck brown 2 R...	170,882	31,241
304	Chrysophenine	148,406	40,466
333b	Diamine black (V. M.)	171,211	19,654
424	Chicago blue 6 B.....	116,560	32,417
436a	Dianol black	112,695	12,635
442a	Direct black (V. M.)..	145,738	11,831
455a	Columbia black (V. M.)	143,056	26,125
462f	Carbide black (V. M.).	190,304	31,607
A169	Benzo fast black L....	100,268	22,846
A382	Oxy diamine black (V. M.)	139,118	26,832
495	Malachite green	178,831	43,363
543	Patent blue	114,631	49,945
558	Victoria Blue R.....	109,627	33,117
562a	Wool blue (V. M.).....	173,904	18,406
606	Phophine	101,858	30,442
659	Methylene blue (V. M.)	185,738	72,619
698	Nigrosine, soluble in spirit (V. M.).....	180,540	23,435
774	Alizarin black. S, SR, NR	136,461	9,936
782	Alizarin brown (V. M.)	110,211	30,907
789	Anthracene blue NR..	107,778	13,622
807	Alizarin black, S.....	198,491	19,902
808a	Alizarin green (V. M.).	124,095	58,491
838	Indanthrene blue, RS..	187,379	56,532
U64	Amine black (V. M.)..	146,163	14,390
U390	Wool black (V. M.)...	118,191	20,453
U799	Black (V. M.).....	138,805	14,781

Class VI.

Serial No.	Commercial name.	Pounds.	Invoice value.
	Nitroso and Nitro Colors.		
4	Naphthol green	19,146	$2,902
	Stilbene Colors.		
9	Direct yellow	71,399	11,295
9a	Naphthalene yellow (V. M.)	42,180	6,748
9b	Direct yellow (V. M.)..	79,055	16,784
9g	Direct yellow B.....	29,123	2,766
10	Stilbene yellow	50,477	7,484
10a	Stilbene yellow RX...	34,588	6,305
11	Chloramine orange.....	24,688	5,914
13a	Diphenyl orange GG....	13,646	3,938
14	Diphenyl chrysoine....	9,898	3,071
18	Diphenyl fast yellow..	9,656	2,988
	Pyrazolone Colors.		
19	Fast light yellow.....	33,514	10,272
20	Flavazine S.....	19,000	4,927
20a	Flavazine (V. M.).....	62,375	10,700
22	Xylene yellow	23,074	9,750
	Azo Colors.		
31	Chrysoidine	65,303	8,585
37	Croceine orange.....	11,366	1,535
38	Orange G.....	48,456	7,159
45	Brilliant lake red R...	31,674	2,337
56	Autol red.....	49,847	5,379
58	Mordant yellow.....	26,570	4,112
58a	Anzarin yellow (V. M.)	59,000	7,676
58	Orange 13, 14.....	10,974	2,634
61	Victoria violet.....	47,126	10,998
65	Azo acid blue.....	44,258	8,544
66	Lanatuchsize	68,055	9,375
69a	Amido napthol red...	36,000	25,970
70	Brilliant orange O....	21,460	6,555
73	Hello fast red.....	13,413	2,141
73a	Lithol fast scarlet....	36,295	9,287
80a	Wool scarlet (V. M.)..	39,888	6,293
82a	Ponceau (V. M.).....	20,972	1,931
88a	Acid anthracene brown (V. M.).....	30,555	7,932
90a	Chrome fast yellow....	15,165	3,056
102	Diamond flavine G....	23,080	4,226
112	Bordeaux B.....	10,385	1,474
112a	Claret red.....	14,338	1,291
118	Geranine	18,917	6,000
128a	Union blue (V. M.)....	35,353	2,116
137	Acid yellow.....	35,982	6,313
139	Orange IV.....	11,238	1,966
140	Carcumeine	39,200	6,257
141	Azo yellow.....	50,804	13,755
141a	Azo flavine (V. M.)...	20,114	3,151
141b	Indian yellow (V. M.).	10,537	2,392
146	Azo fuchsine G.....	17,819	2,585
147	Azo fuchsine 6 B.....	13,206	1,867
151a	Orange R Q.....	99,147	7,395
152	Permanent red 4 B....	44,859	14,513
152a	Permanent red (V. M.)	56,545	7,403
154	Palatine chrome brown	18,264	4,674
159a	Vigoureux fast black T	16,000	3,522
160	Fast brown N.....	67,531	6,200
161	Fast red A.....	46,359	5,465
163a	Carmoisine (V. M.)....	17,107	2,427
163b	Chrome blue (V. M.)..	53,404	19,874
164a	Diamond blue R.....	20,117	3,800
168	Amaranth	73,973	9,420
168b	Wool red (V. M.).....	11,497	2,285
169	Cochineal red.....	29,984	3,669
173a	Lithol red (V. M.).....	67,515	5,029
177	Mordant yellow.....	85,003	11,280
177a	Anthracene yellow.....	16,050	3,011
177b	Salicine yellow.....	23,008	3,556
180	Erichrome blue black BC	43,880	8,485
181	Salicine black U.....	65,658	10,606
182	Brilliant sulphon red..	4,871	4,289
184	Eriochrome black A...	96,570	13,350
185	Anthracene chrome black	51,577	7,869
188	Sulphon acid blue R..	45,038	11,372
189	Sulphon acid blue B..	35,112	8,813
198	Thiazine yellow.....	29,879	8,410
211	Resorcin brown.....	13,189	2,549
212a	Acid brown (V. M.)...	14,705	3,238
217	Agalma black 10 B....	40,763	7,518
217a	Agalma black (V. M.).	13,465	2,359
217c	Naphthol blue black (V. M.).....	62,864	8,864
217e	Acid black (V. M.)....	47,489	7,547
217g	Wool black (V. M.)....	23,371	4,866
217h	Acid wool black.....	13,518	4,202
220a	Amido acid black.....	32,624	3,614
236	Wool red	13,245	1,942
247	Scarlet	36,598	4,228
257b	Tolyl blue.....	16,750	2,967
263	Sulphon cyanine black.	69,590	7,663
269	Acid black.....	35,662	5,765
272	Brilliant black.....	39,454	5,588
272b	Wool black (V. M.)....	15,756	3,596
275a	Chrome black (V. M.).	72,521	13,616
275c	Chrome fast black (V. M.)	35,999	10,532
277	Anthracene acid black.	17,796	2,647
279	Benzo fast scarlet.....	36,674	9,010
283	Bismarck brown.....	27,676	5,352
288	Palatine chrome black.	18,985	1,607
296	Cotton yellow.....	21,437	6,161
303	Renol brilliant yellow.	12,786	3,290
307	Congo	12,040	1,687
308	Diazo black.....	62,854	8,257
312	Congo Corinth.....	39,748	6,050
313	Congo rubine.....	46,113	6,329
319	Diamine scarlet.....	28,887	9,027
326	Oxy diamine violet....	11,514	1,938
326a	Benzo violet R.....	12,467	1,552
327	Diamine violet N.....	13,107	2,840
333d	Develop black.....	17,495	4,353
334	Diphenyl blue black...	26,240	4,415
335	Naphthamine black....	47,969	7,132
337	Benzo blue.....	19,065	789
338	Naphthamine blue.....	11,707	2,455
343	Diamine fast red.....	47,724	17,131
344	Diamine brown.....	63,716	12,457
346	Oxamine red.....	11,636	2,568
348	Diphenyl brown BN...	13,471	4,015
358	Diphenyl red.....	12,808	5,001
360	Pyramine orange R....	21,329	7,818
362	Oxydiamine orange....	19,065	4,223
365	Benzopurpurine (V. M.)	21,090	3,442
366	Deitapurpurine 5 B....	20,284	3,646
370	Brilliant Congo.....	19,133	3,133
384a	Diamine blue (V. M.)..	21,725	3,687
392	Toluylene orange.....	55,562	13,236
400	Acid anthracene red...	17,500	5,174
405	Benzopurpurine 10 B.	47,708	11,181
410	Benzazurine (V. M.)...	78,699	21,018
416	Brilliant azurine 5 G..	18,395	3,206
418	Diamine brilliant blue G	11,592	2,496
419	Chicago blue R W.....	15,176	3,364
421	Oxamine Blue B.....	14,091	2,436
421a	Oxamine blue (V. M.).	21,800	3,749
426	Benzamine pure blue..	12,881	5,663
428a	Direct blue (V. M.).....	21,322	6,366
449	Trisulphon brown.....	16,781	5,255
456	Benzo fast blue.....	73,936	20,097
456a	Benzo fast blue (V.M.)	26,559	8,439
462	Direct deep black E.W.	32,850	5,032
*462c	Cotton black (V. M.)..	91,485	22,200
462d	Union black (V. M.)..	61,218	9,044
469	Chloramine black	20,095	5,278
469a	Chloramine black (V. M.)	19,505	3,951
474	Oxamine green B.....	23,832	5,134
474a	Diamine green (V. M.)	53,268	8,318
476a	Benzamine brown 5 G.	16,988	2,470
477a	Naphthamine brown (V. M.)	48,734	9,452
478	Columbia green.....	24,749	4,723
478a	Direct Green (V. M.)..	19,313	4,291
485a	Benzo brown (V. M.)..	41,905	7,125
490a	Cotton brown (V. M.)..	23,975	5,207
	Unclassified Azo Colors.		
A6	Chrome fast black (V. M.)	76,451	10,172
A12	Columbia brown(V.M.)	20,793	3,073
A16	Columbia fast blue (V. M.)	84,661	18,879
A28	Naphthogene blue (V. M.)	33,847	6,824
A32	Nerol (V. M.).....	65,441	9,751
A44	Colamine blue B.....	21,704	8,376
A69	Corvan black (V. M.).	10,033	1,870
A71	Cotton black (V. M.).	24,505	4,843
A81	Lithol fast orange R..	36,641	4,381
A88	Oxamine black (V. M.)	50,032	10,472
A95	Oxamine brown (V.M.)	93,454	22,569
A102	Oxamine copper blue RR	10,222	1,941
A104	Oxamine dark blue (V. M.).....	23,810	4,246
A109	Oxamine dark brown G, R.....	10,590	1,312
A122	Palatine chrome blue BB	42,244	4,679
A124	Palatine chrome green G	19,665	6,452
A131	Scarlet (V. M.).....	80,778	7,281
A142	Wool scarlet (V. M.).	12,780	1,417
A144	Acid black E, M.....	18,660	2,031
A147	Acid chrome black (V. M.)	39,568	8,052
A150	Acid silk black R.....	12,028	2,234
A157	Benzo chrome black blue B.....	51,315	9,804
A166	Benzo dark green B, GG	13,038	2,123
A176	Benzo fast heliotrope (V. M.).....	13,018	5,541
A184	Benzo green (V. M.)..	16,500	2,850
A191	Benzo red 10 B, 12 B.	19,429	4,715
A202	Benzo rhodaline red B, 3 B	11,873	1,813
A210	Brilliant fast blue (V. M.)	11,553	3,309
A215	Cashmere black 3 BN, V	12,269	1,881
A227	Diazo brilliant scarlet (V. M.).....	38,660	14,210
A242	Diazo fast black (V. M.)	29,330	7,476
A250	Direct black (V. M.).	12,048	2,019
A266	Hello Bordeaux BL...	14,703	795
A277	Orange RO.....	24,288	2,246
A285	Phenylamine black 4 B	14,066	1,619
A286	Pluto black (V. M.)..	30,010	6,034
A292	Pluto brown (V. M.)..	14,580	2,542
A303	Alphanol black (V.M.)	30,180	5,124
A336	Azo wool violet (V.M.)	12,944	3,298
A346	Diamine catechine (V. M.)	66,876	14,942
A351	Diamine fast blue (V. M.)	28,880	7,227
A355	Diamine fast orange (V. M.)	17,387	4,819
A361	Diamine jet black (V. M.)	14,091	4,315
A362	Diamine neron BB....	36,982	6,204
A367	Diamine orange (V.M.)	17,068	2,851
A368	Diamine sky blue F F	41,115	7,574
A384	Oxy diamine brown (V. M.)	23,498	3,810
A385	Oxy diamine carbon (V. M.).....	34,388	7,864
A388	Para diamine black (V. M.).....	18,634	2,690
A403	alicine blue B.....	16,224	8,449
A414	Amido naphthol black 4 B, R K.....	10,750	1,219
A418	Azo acid black (V. M.)	19,500	3,042
A430	Fast mordant blue B R	17,000	4,612
A437	Naphthalene blue B, D L	28,000	5,102
A439	Victoria scarlet R, 3 R	22,400	2,379
A444	Direct green (V. M.).	31,194	5,091
A451	Heliogoland black FFN	25,132	4,151
A469	Oxychrome brown (V. M.	10,490	2,235
A472	Oxychrome yellow (V. M.)	10,085	1,985
A478	Triazol blue (V. M.)..	10,148	1,580
A485	Triazol brown (V. M.)	17,067	2,854
A489	Triazol dark blue (V. M.)	19,489	2,647
A515	Brilliant scarlet 2 R, 4 R.....	12,565	1,425
A524	Anthracyl chrome blue 2 B, D.....	24,979	6,385
A527	Croceine scarlet MO, MOO	12,210	2,235
A531	Acid blue black.....	15,501	3,023
A532	Acid chrome blue.....	12,952	4,365
A533	Acid fast green S B...	14,050	7,068
A541	Diazogene black (V. M.)	30,042	6,813
A550	Direct black ABC, C..	15,245	2,804
A552	Direct chrome brown.	12,178	2,665
A556	Drazlione blue (V. M.)	10,831	4,425
A566	Drazoline brown (V. M.)	21,756	4,979
A568	Drazaline sky blue FF	10,940	5,204
A600	Excelsior black.....	59,956	16,690
A603	Hydrazol black.....	10,981	1,629
A605	Hydrazol chrome black CB, DB.....	51,694	7,499
A612	Chicago red III.....	13,195	2,429
A617	Diphenyl blue (V. M.)	12,677	3,842
A622	Diphenyl deep black (V. M.).....	21,098	4,216
A629	Diphenyl green (V.M.)	18,021	4,667
A664	Chlorantine brown (V. M.)	18,267	4,034
A674	Chrome fast brown (V. M.)	12,204	3,550
A682	Chrome fast green (V. M.)	12,943	6,670
A687	Cupranil brown (V. M.)	24,851	4,859
A692	Direct black E.....	22,223	4,205
A696	Direct fast black B...	11,290	2,799
A711	Azo rhodine 2 B.....	10,108	2,624
A719	Direct sky blue FF...	58,838	12,827
A729	Azomine milling black	22,560	5,124
	Triphenylmethane Colors.		
497a	Victoria green.....	44,595	10,305
499	Brilliant green (V. M.)	73,904	16,345
502	Guinea green.....	14,666	3,362
502a	Acid green (V. M.)....	35,305	9,379
503	Neptune green (V. M.).	40,868	13,825
505	Light green (yellowish) (V. M.).....	24,946	5,960
505a	Acid green (V. M.)....	46,461	20,176
506	Eriogiaucine (V. M.)...	66,526	28,971
512	Magenta	87,102	25,659
516	Crystal violet.....	33,653	13,664
516a	Violet (V. M.).....	18,219	5,289
517	Benzyl violet	22,387	6,018
518	Ethyi purple.....	51,933	23,101
521	Aniline blue	50,563	18,586
524	Acid magenta	19,098	4,030
527	Acid violet	13,078	4,362
527a	Acid violet (V. M.)....	16,106	5,309
528	Fast acid violet 10 B..	12,919	3,229
530	Acid violet	50,055	12,806
530a	Acid violet (V. M.)....	65,395	20,954
530b	Formyl violet (V. M.).	19,819	4,185
530c	Guinea violet 4 B, 6 B	18,854	5,114
531	Eriocyanine	25,091	11,987
534a	Acid violet (V. M.)..	19,960	6,310
537a	Navy blue (V. M.)....	31,499	6,275
538a	Cotton blue (V. M.)..	45,019	9,809
539	Soluble blue	86,523	31,093
543c	Acid blue	14,467	4,916
545	Patent blue A.....	40,848	10,229
545a	Neptune blue (V. M.).	10,765	2,305
545c	Brilliant acid blue (V. M.)	10,120	3,525
546	Cyanol	40,015	15,757
551	Eriochrome azurol B C	21,070	14,480
	Diphenyl-Naphthyl-Methane Colors.		
564	Naphthalene green ...	22,144	5,904
566	Wool green S.....	33,863	13,526
566b	Cyanol green (V. M.).	10,988	2,193
	Xanthone Colors.		
571	Rhodamine G G.....	37,460	18,495
573	Rhodamine B.....	58,339	23,777
576	Rhodamine 3 G.....	16,940	6,858
580a	Fast acid violet (V.M.)	19,811	13,975
587	Eosine	35,511	13,183
587a	Eosine (V. M.).....	21,017	7,891
587b	Bromo-fluorescein acid	38,000	18,397
590a	Acid eosine	17,499	7,388
590	Galleine	15,404	8,817
	Acridine Colors.		
606c	Patent phosphine	28,627	17,881
606g	Leather flavine	24,153	8,235
607	Rheonine	19,704	5,261
608	Euchrysine	15,403	5,343
609b	Diamond phosphine...	30,236	5,897
609c	Corioflavine	40,347	13,438
	Quinoline and Thiobenzenyl Colors.		
612	Quinoline yellow (spirit soluble)	79,553	28,170
613	Quinoline yellow (water soluble)	15,324	7,072
616	Primuline	56,212	8,478
617	Columbia yellow (V.M.)	86,090	10,165
617a	Diamine fast yellow (V. M.).....	88,688	12,972
618	Thioflavine T.....	31,714	17,683
	Oxazine and Thiazine Colors.		
627	Gallocyanine	78,253	27,227
649	Cotton blue (V. M.)...	32,509	9,675
660	Methylene green(V.M.)	30,812	13,196
661	Thionine blue (V. M.)..	18,618	7,873
663	New methylene blue (V. M).....	30,392	12,127
667	Indochromine (V. M.).	19,060	12,430
	Azine Colors.		
672	Azo carmine	17,500	5,453
679	Safranine (V. M.).....	59,921	21,273
681	New fast gray (V. M.)	29,507	10,436
697	Induline, soluble in spirit (V. M.).....	25,342	5,016
699	Induline, soluble in water (V. M.).....	21,775	5,514
705a	Indocyanine B, 2 R F	23,138	5,205
	Sulphur Colors.		
708	Sulphaniline brown O, R	11,327	1,158
710	Immedial yellow D (V. M.)	13,395	2,266
725	Immedial brown (V. M.)	23,887	2,558
726	Pyrogene blue (V. M.)	10,934	2,582
734	Pyrogene yellow M, O.	18,515	5,102
735	Pyrogene indigo (V. M.)	22,661	6,652
739	Immedial maroon B...	15,496	2,885
746	Katigene green (V. M.)	63,929	9,950
750	Krogene brown A, G.	10,313	972
	Unclassified Sulphur Colors.		
83	Sulphur blue (V. M.)..	73,434	15,489
S12	Sulphur brown (V. M.)	79,691	9,505
S18	Sulphur catchu G, R.	48,973	5,071
S26	Sulphur indigo (V. M.)	10,488	2,085
S37	Katigene black brown (V. M.).....	11,006	1,336
S40	Katigene blue black 4 BPA	49,310	4,084
S45	Katigene brown 2 R, V	22,811	2,452
S49	Katigene direct blue B, RF.....	11,299	2,305
S51	Katigene indigo (V. M.)	42,157	5,924
S55	Katigene khaki G.....	14,242	1,691
S58	Katigene red brown R, 3 R.....	68,864	9,386
S62	Katigene yellow G, GG GR.....	55,227	9,318
S65	Katigene yellow brown (V. M.).....	36,826	5,617
S75	Immedial direct blue (V. M.).....	73,892	11,145
S76	Immedial indogene (V. M.)	90,077	13,141
S78	Immedial new blue G.	37,492	10,016
S84	Sulphur brown.....	12,735	1,926

Lithographed Cans

Have you ever stopped to consider the appearance of your package?

If a consumer enters a store to purchase and has no particular brand in mind, he will naturally take the can that makes the best appearance.

A paper label is liable to become soiled, ragged, or possibly torn from the can.

A lithographed label cannot be torn off, cannot become ragged, and if it becomes soiled it can easily be cleaned---and it increases sales value 100 per cent.

Let us submit sketches showing what we can do to improve the appearance of your package.

American Can Company

New York

Chicago **Hamilton, Ontario** **San Francisco**

With offices in the largest Cities

886	Thion brown (V. M.).	18,579	2,824
907	Tiogene blue (V. M.).	14,344	2,261
8100	Thiogene brown (V. M.)	97,551	10,601
8109	Thiogene deep blue...	13,106	3,049
8155	Pyrogene brown (V. M.)	63,450	6,689
8168	Sulphur bronze.....	15,152	1,392
8177	Crose dye drab N.....	15,758	1,324

Anthraquinone and Allied Colors.

760	Indanthrene gold orange G.....	20,092	10,088
761	Indanthrene gold orange	50,496	2,052
763	Indanthrene dark blue BO	11,096	2,516
765	Indanthrene green B.	72,227	16,377
767	Indanthrene violet RR.	68,419	21,516
768a	Indanthrene black B, BB	50,634	12,876
774b	Alizarin black (V. M.)	61,187	19,239
779	Alizarin orange (V.M.)	14,259	3,184
780	Alizarin red.....	53,154	24,784
780a	Alizarin red (V. M.)...	28,775	5,708
785a	Alizarin (V. M.).....	49,021	5,379
790a	Anthracene blue (V.M.)	22,444	7,174
800	Anthracene blue WB, WG	54,712	9,228
803	Alizarin blue WX, A...	16,575	6,453
804	Alizarin blue S.....	79,679	69,871
804a	Alizarin blue SB, 942.	12,400	6,158
804c	Alizarin sky blue B...	19,471	24,555
805	Alizarin green S.....	15,885	2,497
807a	Patent alizarin black (V. M.).....	61,500	10,049
808	Alizarin green (S.....	11,096	2,337
810a	Heilndone yellow CG.	20,744	6,954
820	Algol brilliant violet R	12,784	5,923
827	Indanthrene claret B.	28,728	9,923
832	Indanthrene violet RN.	11,667	5,181
833	Algol olive R.....	13,334	2,850
841	Indanthrene blue GGS.	10,163	4,284
849	Indanthrene yellow G, GP	12,683	4,353
849a	Indanthrene violet yellow GP.....	62,509	20,738
850a	Indanthrene blue WR.	31,658	4,272
851a	Alizarin direct blue (V. M.)	10,201	11,878
856a	Alizarin rubinol R.....	10,917	11,826
859	Cyananthrol R.....	18,792	27,555
862	Alizarin blue black B, 3 B.....	54,706	61,370

Indigo and Its Derivatives.

877	Indigo extract.....	19,329	6,577
879	Indigo MLB.....	53,610	11,004
881	Ciba blue 2 B.....	16,880	7,427
886	Brilliant indigo GD....	12,057	1,747
888	Indigo MLB, T.....	12,730	1,598
901	Civa violet B.....	19,830	6,975
904	Helindone brown G....	12,936	6,710
907	Ciba scarlet G.....	22,265	11,479
910	Helindone pink (V. M.)	39,393	47,117
913	Helindone orange R...	14,489	5,841
918	Helindone red 3 B....	27,874	10,942
920	Helindone violet B, 2 B, R.....	28,607	15,945
923	Ursol	53,720	15,779

Unclassified Coal-Tar Colors.

The following dyes include imported artificial colors, the composition or manufacture of which are not known, and which have not been mentioned among the unclassified azo colors and sulphur colors:—

U20	Guinea Bordeaux (V. M.)	23,252	3,233
U24	Indo violet B.....	21,060	4,647
U27	Metachrome blue B, G	14,301	3,996
U31	Metachrome brown B L, BRL.....	57,343	7,271
U61	Scarlet 53446.....	13,344	1,246
U78	Chrome fast blue 4 B	23,585	5,198
U86	Columbia fast black (V. M.).....	62,040	15,756
U100	Basic kraft brown, YZ	11,235	2,039
U109	Brilliant scarlet (V.M.)	23,382	2,588
U121	Corvoline BT.....	10,789	3,241
U138	Fast acid marine blue HBB	25,567	6,212
U145	Japan black (V. M.)..	13,974	2,766
U151	Jet black APX, RR..	19,442	4,779
U154	Kraft brown L, YZ...	43,807	10,218
U158	Leather black BO, CR	16,433	4,843
U163	Oil black 6 B, 6 G, HG	28,603	4,258
U180	Pigment black.....	22,448	926
U183	Quercitron substitute WBL, V.....	16,812	2,422
U192	Thiazine brown R....	12,105	2,809
U206	Acid chrome blue 3 G, 2 R, 5 R.....	25,633	6,553
U217	Blue 27071.....	14,775	994
U238	Claret lake BL.....	15,290	949
U246	Half wool blue 3 R...	20,610	3,790
U271	Wool fast blue BL, GL	19,238	6,331
U279	Brilliant lanacheine (V. M.).....	11,280	1,757
U283	Brilliant scarlet (V. M.)	41,082	4,317
U290	Leather black (V. M.)	11,784	3,063
U293	Nerazine G, GA.....	44,676	8,484
U304	Acid red (V. M.).....	30,099	6,238
U321	Carpet red B, BT, R..	15,445	1,649
U329	Cotton brown (V. M.).	15,079	4,959
U332	Cotton marine blue 4676	79,035	10,902
U333	Cotton orange (V. M.)	21,665	5,116
U335	Direct black (V. M.)..	42,277	8,438
U336	Direct blue (V. M.)..	57,224	14,318
U337	Direct brown (V. M.).	21,828	4,799
U361	Naphthamine fast black, SE, SDE, VE	34,203	10,671
U378	Paper scarlet (V. M.).	24,372	3,101
U385	Scarlet (V. M.).....	29,634	3,363
U391	Wool blue (V. M.).....	23,020	6,854
U393	Wool brown (V. M.)..	40,736	6,333
U394	Wool cerise SR.....	16,038	2,359
U395	Wool green.....	20,255	5,488
U397	Wool violet R, SL....	12,584	3,429
U399	Wool yellow (V. M.)..	17,465	2,629
U423	Alizarin pure blue, DP N	31,000	7,349
U440	Hansa yellow G, 5 GR	11,014	4,659
U460	Paratol chrome yellow L	17,336	1,238
U465	Paratol scarlet 3 B...	41,000	8,271
U470	Rosazeime B, B 5, 6 G	17,500	8,536
U510	Cresol black (V. M.)..	37,322	4,346
U526	Chrysolarine A.....	15,756	6,575
U553	Black BH, HB.....	21,239	4,780
U570	Developed black B, N, R, W.....	36,475	9,501
U610	Erio violet BC, RLC.	21,345	6,117
U682	Sepia black FW.....	10,527	2,367
U687	Solifigene deep black (V. M.).....	61,949	9,509
U695	Blue (V. M.).....	13,857	3,627
U701	Calcutta blue 2.....	26,669	4,669
U708	Meridian black AE, A N	15,157	3,316
U711	Omega chrome cyanine R	21,001	3,019
U716	Alpha black JC, 6 BN	12,100	2,949
U731	Cachou (V. M.).....	56,991	3,430
U744	Alizadine black M....	18,979	1,986
U770	XL blue (V. M.).....	10,047	2,126

The Virginia-Carolina Chemical Company, Richmond, Va., on September 20 announced the purchase of the plant of the Empire Guano Company, of Americus, Ga. This is one of the really large plants in the South, and the consideration is reported to have been several hundred thousands. This plant will be used to take the place of a plant recently burned at Americus.

CAN AMERICA MANUFACTURE APPARATUS IN COMPETITION WITH THE FOREIGN MAKERS?

By ARTHUR H. THOMAS, Who presided at the Industrial Conference on "American-Made Chemical Glass and Porcelain," on Thursday afternoon.

Before the war, with the exception of one large factory in the United States, which made, in addition to extensive products in other lines, a few flasks and beakers of excellent quality and reasonable price, hollow glassware for the laboratory was purchased exclusively in Europe. The American production was not, in any commercial sense, a factor in the situation.

Five factories in the United States are now regularly making flasks and beakers in large quantities. The glass used by one of these is superior in several important physical characteristics to that used for similar vessels by the European factory whose flasks and beakers have been heretofore considered the best in the world.

The four other makers are using a resistance glass much alike in physical characteristics which, while not quite equal to either the American or European product above referred to, is unquestionably superior to the glass generally used throughout Germany and Austria. There are two other American factories making flasks and beakers about which I have no definite information from actual tests.

Shortage Seems Inevitable.

With the present conditions of shortage in almost all of the raw material involved, in the labor situation, and in the exhausted condition of stock in many of the large college and university storerooms, a considerable shortage for some time seems inevitable unless additional capacity is operated.

Before the war, with the exception of a few items not of significance to our discussion, such as hydrometers and thermometers for clinical and industrial use, homeopathic vials and test-tubes, milk bottles and syringes, all staple shapes made of tubing before the blast lamp, including the graduation of blanks made in the factory, were purchased in Europe.

Repair work and the manufacture of a greater variety of special items, not in sufficient demand to warrant arrangement for importation in large quantities, was conducted in a few glass-blowing shops operated by some of the larger dealers, in separate small shops in a few of the larger cities, and in the south Jersey district as an important side line in connection with three large glass factories.

Two of the south Jersey factories referred to have practically given up the making of any regular stock in this classification because of the shortage of labor and the great demand for their own specialties. The other south Jersey factory has greatly increased its capacity for the more staple and easily made shapes, and is making a commendable, but as yet totally inadequate, attempt to meet present requirements.

Output Not Sufficient.

The combined output of all establishments in this classification is far from sufficient to fill the daily orders for immediate shipment.

Before the war porcelain ware for chemical use was all purchased in Europe. One attempt to manufacture and market American laboratory porcelain ware some seventeen years ago proved unsuccessful because of poor quality of the product.

Three potteries in the United States are now making crucibles and dishes and some other shapes in fair quantity. Another factory, not yet marketing their ware, but conducting extensive experimental work, promises a product superior in quality to those already offered. One Japanese concern is regularly shipping large quantities of very excellent porcelain ware, and a second Japanese factory is sending samples and is reported to have made some shipments. Some Danish ware is being offered, and several well-known British factories are advertising laboratory porcelain in the British journals, but it is unlikely that their production is equal to their own demand.

Before the war, for several years, there were two, and sometimes three, paper factories in the United States making qualitative filter paper of good quality. The two brands of filter paper in widest use and for the greatest variety of purpose were purchased entirely in Europe.

The two paper factories referred to are still making filter paper, but are unable to contract for large orders because of the great shortage of suitable rags. The two other firms have given up deliveries for the present. Other experienced American paper makers are actively experimenting on quantitative papers.

Before the war optical measuring instruments, as used in chemical laboratories, were all purchased in Europe, with the exception of microscopes, the manufacture of which has been extensively and successfully conducted in America for many years.

There is no new manufacturing in America to be recorded in this line as a result of the war, but enormous pressure is being put upon the several factories equipped for such work for deliveries of prism binoculars, range finders, telescopes, as used in gunnery, periscope optics, etc.

No Assay Balances Imported.

Practically no assay balances have been imported from Europe in recent years, the demand for such balances having been particularly well met by the excellent instruments of two American manufacturers. The business in analytical balances was about equally divided among three standard American makers, and three equally well-known European makers.

The only change to note is that at present all of the American makers are far behind in their deliveries, even though one of the foreign makers referred to is still accessible.

Let us now consider the possibilities of the future. It seems probable that a fair share of our consumption of flasks and beakers will be made in the United States after the conclusion of the war, without any increase in duty or any curtailment of the duty-free privilege. With some restriction of duty-free entry they would, I think, all be made here.

Reasoning in a manner akin to the above seems to justify a similar conclusion for the classifications of "porcelain ware," "filter paper" and "optical measuring instruments." "Hardware and sheet metal ware" and "analytical and assay balances and weights" have already shown their ability to take care of themselves.

This leaves us for further consideration the very important "lamp-blown and volumetric ware." It is the shortage in this group which is now causing the greatest inonveniene, and it is about the making of such goods that we have much to learn if any significant fraction of our annual consumption is to be regularly manufactured in the United States.

Some Laboratory Glassblowers.

In the United States we now have some laboratory glassblowers, but should he not be a part of every chemical laboratory conducting original work if we are to develop and manufacture lamp-blown chemical apparatus to any extent? Should we not also encourage the establishment and support of these small outside shops under the wing of our large universities and research institutions where the new and special apparatus which has been developed in their laboratories may be made, still more or less under the watchful eye of the author, and sold to those interested until the demand warrants its manufacture in large quantities at the lower prices possible in an organized shop?

Is a higher tariff fundamentally necessary to the permanent establishment of the manufacture of chemical apparatus in the United States? It certainly is not, so far as much of the apparatus we have considered is concerned. It might, however, be practicable to discontinue the duty-free entry of at least such glass and porcelain ware as has hitherto been imported in such enormous quantities for routine student work. I mean the flasks, beakers, funnels, burettes, pipettes, evaporating dishes, crucibles, test-tubes and the like, which are dispensed from the laboratory storeroom to the students for their individual work and for which the institution is paid by laboratory fees, breakage charges and similar arrangements.

The first result of such a change would certainly be a far keener interest on the part of possible manufacturers in the United States. Another outcome might be that the laboratory glassblower or the small outside glassblowing shop would naturally add the function of dealing to that of glassblowing.

In the apparatus line, as in the dyestuffs, we shall do well to remember that the answer to the daily question, "Why do we not make it in America?" requires a more profound analysis than is apparent in newspaper editorials and that what is now indicated is an intelligent and, above all, an unselfish co-operation between the manufacturer, dealer and chemist.

Hearing on Acid Freight Rates Ordered.

Washington, Sept. 29, 1916.

In the matter of acid from Missouri River points, the Interstate Commerce Commission has ordered without formal pleading a hearing concerning the propriety of increase and the lawfulness of the rates, charges, regulations and practices stated in schedules filed by the Chicago Great Western and the Chicago, Milwaukee and St. Paul Railway companies. The commission announces that as it appears that these schedules make increases in rates for the interstate transportation of sulphuric acid, mixed and muriatic, the effective date of the schedule shall be postponed pending hearing and decision, the operation of these schedules to be deferred upon interstate traffic until December 30, 1916.

PAPER SYMPOSIUM

Industrial Conference on Friday at Grand Central Palace on Pulp and By-Products.

Both sessions of the Technical Association of the Pulp and Paper Industry Friday were full of interest. The first session was devoted to reading reports and papers which were not completed on Thursday, among the most important topics being discussed being "The Acid Resisting Qualities of Different Alloys Against Bi-Sulphite Cooking Liquor," the subject of a paper by Sidney E. Lunak, representing the Forest Products Laboratory at Madison, Wis.

The afternoon session was taken up by a symposium of "Manufacture of Paper Pulp and By-Products," in which members of the American Chemical Society also participated. Robert B. Wolf, who presided at this symposium, opened the discussion with a brief talk upon proper organization in a manufacturing plant.

Mr. Wolf's Remarks.

"The point of view I wish to present," he said, "is that in order to make scientific progress, organizations must be organized as individuals. For example, the individual chemist or engineer is searching for laws which have to do with the process that he is employing in manufacturing.

"When he finds these laws he produces conditions under which these natural laws can expand and produce more efficient results than under the old conditions.

"Our industrial organizations must be organized on the same basis. The individual organization is doing this, and the man a small fractional part of the work in one particular type of work turned out. Therefore, the organization must be built up in such a way that the method of control corresponds with the nervous system of the human body. We must have a definite organized mechanism where all things affecting the organization are created. This should be done preferably in a graphic way.

"I have not time to sketch this kind of organization in detail, but wish to leave with you this thought: No organization can be thoroughly efficient in specializing the natural laws that it is using unless it can become thoroughly individualized, which implies the highest type of individualized organization. I want to make also a plea for a definite freedom of action in the organization, for it is impossible for any organization to create necessary conditions for progress unless there is freedom of control in the hands of those in charge. I wish also to make a plea for the proper development of the creative faculty of the man in the organization."

Mr. Millspaugh Followed.

The subject of Mr. Wolf's introductory remarks was further discussed by W. H. Millspaugh, who urged that the human element in the mills be given greater consideration, and emphasized the need of more trained men in organization work. He suggested that much good could be accomplished if each mill would establish a scholarship at some school where instruction in scientific management could be obtained.

Color in its relation to paper making was then taken up for discussion, led by a paper presented by H. P. Carruth, of the American Writing Paper Company. He said that pulp had always presented a color prob'em, because of the unsatisfactory character of samples which faded and changed. A sample cannot state limits and an exact match is a commercial impossibility. Several speakers joined in the talk on this topic, most of its being of a highly technical nature.

Attention was then turned to the utilization of waste sulphite liquors, Walter H. Dickerson, of the Muskegon Extract Company, leading the discussion. He said that manufacturers of sulphite pulp were finding it more necessary to make some profitable use of the waste liquors of the process. Municipal and State authorities were proceeding against them for the pollution of streams and watercourses.

Uses of Waste Sulphite Liquor.

Some of the uses for the waste sulphite liquor proposed by Mr. Dickinson were as a binder for roads; in the manufacture of cores for foundry castings; in making alcohol, the liquor being neutralized, fermented and distilled; evaporation and concentration of the liquor to separate the resins contained in it, and by condensation processes manufacturing artificial resins, which would resist acids and heat and by subsequent treatment yield a varnish resembling Japanese lacquer. Bakelite, a condensation product of carbolic acid and formaldehyde, is a substance almost identical with that which it is proposed to manufacture from the liquor.

The waste liquor is now utilized in the tanning of leather and in the manufacture of coal briquettes. One ton of liquor, it was stated, would produce under proper conditions 1,500 pounds of solid matter. The production of sulphite pulp during 1915 was at the rate of 9,000,000 pounds daily.

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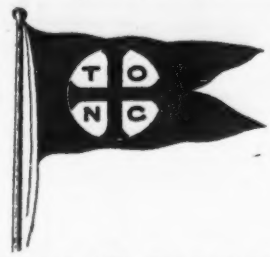
FAST FREIGHT  SERVICE

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GOVERNMENT CLOSES DEAL TO TRY OUT NEW METHOD OF GETTING PHOSPHORIC ACID

Chemist of Bureau of Soils Discovers Process Which May Revolutionize Entire Industry in This Country.

Washington, Sept. 29, 1916.

The Bureau of Soils on Monday closed a deal with one of the largest baking powder companies in the country, to try out the new method of obtaining phosphoric acid discovered by a chemist of that bureau. This discovery which was announced in the last issue of the Oil, Paint and Drug Reporter, the experts of the Bureau of Soils believe, may revolutionize the entire production of phosphoric acid in this country.

With the aid of the baking powder company, it is expected that the bureau will be able to determine just what the cost of producing phosphoric acid in bulk by the new process will be. These figures should be available within six months, it is said. While the bureau has successfully produced phosphoric acid by the new process, it has done so by obtaining pounds, whereas it would be necessary to obtain tons in a commercial undertaking.

The details of the new process were made public here this week, and the accompanying cut shows the furnaces and the precipitator used by the Bureau of Soils. The experts of the bureau admit that improvements will have to be made in the furnace, and say that they are not at all satisfied with the makeshift arrangement with which they had to work.

The new process consists of smelting phosphate rock with coke and sand in a furnace. Phosphoric oxides are given off. These are precipitated by means of a Cottrell precipitator. The Bureau of Chemists claims that they obtain 92 per cent. concentration of the phosphoric acid, and that it is 99.89 per cent. pure. This is purer than the so-called chemically pure phosphoric acid now used.

The Bureau of Chemists admit that there is nothing new in the smelting of phosphoric rock with coke and sand, and the treatment of the phosphoric oxides with water to produce phosphoric acid. This has been done in the past and there is at least one plant, at Mount Holly, N. C., now using this process to obtain phosphoric acid. The new feature of the bureau's process lies in the use of the Cottrell precipitator.

A patent for the new process has been applied for. If granted, it will be donated to the American people by the Department of Agriculture, as in the case of other inventions or discoveries made by its experts.

While the bureau officials are not ready to assert finally that the new process can be operated at a cost which will enable it to compete successfully with the present method of obtaining phosphoric acid, by treating phosphate rock with sulphuric acid, still they believe that it will be possible. They express confidence that the new process will be of great advantage to the baking powder industry which requires the purest phosphoric acid that can be obtained. They also hope that it will be of value to the general chemical industry, and to the fertilizer industry.

The Cottrell precipitator which is used in the new process was invented by F. C. Cottrell, chief metallurgist of the Bureau of Mines, who devised it for the River Side Portland Cement Company, to cut down the flue dust for that concern. The Cottrell process has of course been patented, and any new patent granted for the phosphoric acid process must necessarily be obtained through arrangement with the Cottrell patent.

A paper presented at the Chemical Convention under the title, "The Use of the Cottrell Precipitator in Recovering the Phosphoric Acid Evolved in the Volatilization Method of Treating Phosphate Rock," by W. H. Ross, J. N. Carothers and A. R. Merts, gives the following details of the new process:—

An investigation on a semi-commercial scale has been made of the use of the Cottrell precipitator in recovering the phosphoric acid evolved in the volatilization method of treating phosphate rock by ignition with coke and silica in an electric furnace. A current of air which was passed over the charge in the furnace served the double purpose of oxidizing the fumes of phosphorus to phosphoric anhydride and of carrying the latter to the precipitator.

In one series of experiments the fumes from the furnace, before entering the precipitator, were passed through a tower provided with baffle plates which had the effect of cooling down the gases to about ordinary temperature. In a second series of experiments the tower was cut out and the fumes passed almost directly into the precipitator, at a temperature above 100 degrees. In each case the phosphorous anhydride, which takes up water from the current of air passing through the furnace and also from the moisture driven off from the charge, is precipitated in the form of a solution of phosphoric acid. When the precipitation is made at temperatures above 100 degrees, the acid obtained is not only more concentrated, but also of a higher degree of purity, with respect to volatile constituents than that recovered at lower temperatures.

The advantage of this method of collecting phosphoric acid over the scrubbing tower method now in use are as follows:—

1. The equivalent required is simple in construction and automatic in operation.

2. The simplicity of the construction of the precipitating pipes decreases the difficulties arising from the corrosive action of the phosphoric and hydrofluoric acids evolved from the phosphate rock.

3. The phosphoric acid recovered in this way is of a high degree of purity and is thus suited for direct use without further purification in those industries where a relatively pure acid is required.

4. A more concentrated acid can be obtained in this way than by any other commercial process, and when this acid is used in the preparation of concentrated fertilizers, such as monoammonium phosphate, a dry product may be obtained directly without the necessity of evaporating solutions, or of drying the resultant product.

This is the first time that the Cottrell precipitator has been used for the precipitation of a product which has been purposely volatilized with a view to its recovery in this way.

Increased Prices of Drugs and Chemcals in 1915, as Compared with 1914.

Washington, Sept. 29, 1916.

Wholesale prices of commodities in the United States averaged considerably higher in 1915 than in the preceding year, according to a bulletin of the Bureau of Labor Statistics. The downward trend which set in toward the close of 1914 did not extend beyond that year and by the end of the January, 1915, prices of many commodities had advanced to a point well above those of the year before.

Violent fluctuations were recorded during 1915 in the prices of many commodities, particularly drugs and chemicals. In this former group, prices as a whole declined during the first five months of the year, after which they rose sharply until the December average was 39 per cent. above that for May.

Comparing 1915 with 1914 in the drugs and chemicals group the increase between the years was nearly 10 per cent.

Of 10 commodities classed as drugs or chemicals, all but crude sulphur increased in price in 1915, as compared with 1914. The most decided increases were for alum, 50.5 per cent.; borax, 24.5 per cent.; glycerin, 37.8 per cent.; muriatic acid, 23.8 per cent.; quinine, 20.5 per cent., and sulphuric acid, 29 per cent.

Cultivation of Chicory Seed in Germany.

Methods employed in Germany for planting and cultivating chicory seed have been described by Gustav Jaensch, who believes they will prove of great assistance in efforts to raise the product in the United States.

Chicory seeds are planted here in 14.1-inch rows ("36 cm. in der Reine"), about 19.7 inches apart. The plants are allowed to grow out and bloom out until the first blossoms have developed a hard, yellow-brown grain. Neither the lateral branches nor the ends of the plants are cut off.

nI this region, where the climate is moderate and great heat rarely prevails, the plants normally reach a height of four to five feet. The crop from March plantings is usually harvested in the second half of September. The entire plants are then cut off just above the roots with sharp and slightly curved knives, bound together in small bunches, and set up in double rows on the fields for after-ripening. The seed can then be threshed only in very dry weather or heavy frost in winter.

Despite all precautionary measures at least 10 per cent. of the ripened seed usually lies on the ground, as a certain percentage necessarily falls off when the plants are touched. Inasmuch as chicory seeds are always considerably damaged by birds in Germany, watchmen have to be kept in the fields all day to prevent excessive loss.

THE NEED OF MORE SCHOOLS TO TRAIN FOREMEN FOR CHEMICAL INDUSTRIES

Many of those listening to the papers and visiting the various exhibits at the meeting of the American Chemical Society, the American Electrochemical Society, the Technical Association of the Pulp and Paper Industry, and at the Exposition of Chemical Industries, held in New York city during the week of September 25 to 30, were no doubt surprised at the wonderful possibilities held in store for future generations. They probably wondered how all this knowledge will be preserved, or how it will be possible to improve on present processes. To those familiar with the subject, however, it is well known that the surface only has been scratched; but to make the most of our opportunities, the technical schools and universities will now have to do their part.

Opportunities for Young Men.

Within the past twenty-five years there has been created a growing demand from industries for young men with chemical training. As a result of this demand, many excellent chemical courses have been established in our universities and technical schools, the graduates from which have found a ready welcome in nearly every line of manufacturing. These young men, for the most part, have been employed as analytical chemists, and, through hard work and untiring effort, have risen to positions of responsibility and trust. The demand for such men has been gradually increasing, until, at the present time, there is hardly a sufficient number available to meet the demands. As our manufacturing processes have become more complicated within recent years, there is another problem which confronts us—that is, the ability to handle these complicated processes in an intelligent manner in the works. In other words, we have come to realize that we must have not only research chemists to work out new processes, and technically trained men in our laboratories to test the materials purchased and the products manufactured, but likewise men in our plants to make these products, who are also technically trained—that is to say, we must make provision for the training of our foremen. Many a process has been pronounced a failure, and many a product ruined, because unintelligent supervision was exercised during the preliminary trials.

What Pratt Has Done.

That such a condition exists was felt by the trustees of Pratt Institute and, as a result, in 1905, a course in applied chemistry was established, which has for its aim the training of young men for foremanship positions in our growing chemical industries. In selecting the one to take charge of the industrial phase of the work the trustees made a very thorough canvass in order to secure a man who, through previous teaching and technical experience, would be qualified to develop the course along such lines as would best meet the requirements of our chemical industries. The man finally selected for the position was Dr. Allen Rogers, a graduate from the chemistry course of the University of Maine in 1897, an instructor in chemistry at that institution for three years, obtained his Ph. D. from the University of Pennsylvania in 1902, was a Senior Fellow at the same school for one year, was an instructor there in organic chemistry for one year, subsequently for one year research chemist for the Oakes Manufacturing Company, Long Island City.

In organizing the work Dr. Rogers attacked the problem from an entirely novel standpoint, as he believed that, to train men for factory work it required that they have factory experience. It being impossible to put the student into actual factories, the next best method was adopted—that of building model factories at the school, where the student might handle materials on a sufficiently large scale to approach commercial conditions.

In the original plan, five model plants were selected, being a soap factory, paint factory, chemical works, dyeing equipment, and tannery. Since the inauguration of the course, however, the scope of the work has been greatly enlarged, the equipment in all of the original plants has been materially increased, and several new plants have been installed, the latter being a dry-color and ink works, varnish equipment, and an intermediate and dyestuff plant. In working in these model plants, the students are assigned in groups, one of the members being foreman. The equipment is of such a character that marketable products can be produced, and, being of a high standard, they find a ready sale. The returns from the sale of manufactured articles is sufficient to offset the cost of raw material. During the past year, the sales from these manufacturing plants, not counting the material used in the manufacture of other products or sold to other departments of the institute, amounted to over twenty-five hundred dollars.

By working in the model plant the student becomes familiar with the handling of machinery, gains experience in the control of men, and acquires confidence in his own ability to work with materials which have a money value. He also learns that to spoil a batch of goods means money lost, or to make an inferior article lowers the efficiency of his plant. In carrying on this work, the foreman must also keep a record of all operations, the cost of raw material, take into account the item of labor, wear and tear of machinery, cost of container, and interest on the investment.

Object of the Course.

The object of this course, as stated above, is to train foreman, and so the instruction is not treated as an engineering problem, the idea being simply to fit young men to handle practically every kind of a piece of apparatus and machine that is found in any chemical manufacturing plant.

Of course, it should be understood that the work in the industrial laboratory is only a part of the instruction given, other essential subjects being necessarily included. In conjunction with the practical work, Dr. Rogers discusses the important problems of the day, which, either from his personal experience in factory work or from his intimate knowledge as the author of several books on industrial chemistry, give the student first-hand information of conditions as they exist in the manufacturing plants at the present time.

Since the inauguration of the course the number of applicants for admission has increased from eight for the first year to over 140 in the past three years. As the number admitted is limited to thirty-five, it is plain to see that more than 100 bright young men have to be disappointed each year, may serve as food for thought for other schools, which might well consider offering courses along similar lines.

How the Graduates Are Employed.

The question as to what becomes of the young men may be asked and so it might be well to note that they are employed in nearly every line of industry. Of the 300 odd graduates there are:—Managers, eleven; assistant managers, three; superintendents, eighteen; assistant superintendents, thirty-one, foremen, sixty-six; chief chemists; sixteen; chemists, ninety-eight; in other lines, six, and out of employment, one; the remainder being employed as inspectors, salesmen or other workers connected with chemical industry.

As an outgrowth of the course in applied chemistry, and largely as a result of the efforts of Dr. Rogers, who is considered an authority on leather, courses in tanning and applied leather chemistry were opened at Pratt Institute in 1911. In conducting these courses the institute has the financial and moral support of the National Association of Tanners and the allied industries, as well as the hearty co-operation of all of the leather trade journals. The majority of students enrolled in these tanning courses come directly from the trades and, on completion of their course, usually return to the plant from which they came. Many plants even send their men and not only meet the expenses of the course but keep them on the payroll during the time.

The tanners of the country realized that the future of their industry depended upon having young men with technical training occupy the positions of responsibility in the plants, and so they appointed a committee and raised the necessary funds to meet the needs. They now realize that, in order to place the industry on a still higher plane, it will require the unhampered attention of the research chemist. To accomplish the higher aim, another fund is being raised, which will insure the establishment of a very complete research laboratory. This research work will be carried out in conjunction with the tanning course where the facilities of the best equipped tanning school plant in the world will be at the disposal of the research chemist and his staff. The National Association of Tanners, therefore, have done the wise thing by first seeing to it that they had technically trained men in their plants before starting a line of investigation which would eventually find its application in the tannery.

Other lines of industry may well profit by the experience of the leather industry, and, in doing so, help to make America the greatest manufacturing center of the world.

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CHEAP ALCOHOL FROM SAWDUST NOT A MOTOR FUEL PANACEA UNDER CONDITIONS

Experts in Motor Engineering Do Not Indorse Statement at Chemical Society—Petroleum Distillates Held Preferable.

The announcement on Thursday at the American Chemical Society convention that, by the employment of new processes, commercial alcohol could be manufactured economically by the employment of sawdust and other waste products for use instead of gasoline stirred automobile engineering experts to a denial that under present conditions it could be used to replace gasoline as a motor fuel.

The cheaper fuel is to be found only in kerosene, when used by a newly invented method for motors, the engineers assert, and in proof of this it was reported that Great Britain has recently placed an order here for special equipment for 1,000 war auto trucks, all of which are to burn kerosene.

A special carbureter attachment for motors, which is expected to come into general use, enables the auto owner to burn kerosene in any quantity without injury to the mortor or any part of the machinery. This attachment is attached in place of the present style carbureter and feed tank pipes.

Kerosene as a Motor Fuel.

Representatives of the British army who went to the Detroit automobile district to witness demonstrations of the use of kerosene for auto fuel found the results so satisfactory that they sent favorable reports to the British Government. The outcome of this was the first large order placed here during the last two weeks for 1,000 of these equipments for war cars and auto trucks. It was said yesterday that this new method is being developed by a Western firm to meet a peculiar situation similar to ours, but more stringent, which is now confronting Great Britain and some of her allies in the use of gasoline. Great Britain has put up the price of gasoline to 80 cents a gallon, and limits the quantity which ma ybe used by individuals to eight gal'ons a month.

Confirms Merits of Invention.

Professor Charles E. Lucke, of the Department of Mechanical Engineering at Columbia University, confirmed the report of this British order for kerosene-burning equipment for cars. At the same time he presented the opinion of engineering experts as to the value of alcohol as a substitute for either gasoline or kerosene fuel.

"Alcohol never has been a factor in the fuel situation," said he. "The denatured alcohol is, of course, the only kind that has commercial possibilities as a fuel proposition. There is no tax on that, but it costs usually anywhere from 40 to 50c. a gallon, although the chemists contend that according to their new method of production the cost may be reduced to 25c. a gallon. The other kind of alcohol, that containing the 'whiskey kick' in it, is not to be considered, as the tax makes it prohibitive.

Cheapest Fuel from Petroleum.

"This is one of the greatest petroleum-producing nations on earth, and naturally it is from this source, rather than from another, that a cheap and abundant supply of fuel suitable for automobiles and motor boats is to be looked for, to replace the high-priced gasoline. This fuel must have the same productive power if it is to take the place of gasoline. This qualification kerosene has fully met when used in recent tests in the new form of carburetor and car attachments.

"Alcohol has to go through an elaborate process, which, with the cost of raw materials added, must always be a product, selling for a few cents, and even kerosene as a fuel. Kerosene is a by-product, selling for a few cents, and even given away at some factories today because the supply is far in excess of all demands. Our experiments have shown that kerosene has the same value as gasoline for fuel, for autos, and motor boats. It needs to be vaporized or heated to make it do the work of gasoline, and a simple and practical method has been devised to accomplish this. For the present I am not permitted to describe the details of this method further than to say that attachments are made to any car in the form of a new type of carburetor and feed tank pipes.

Lacks Faith in Alcohol.

"The process will soon become well known, and I believe will be in general use. The cost of the attachments is approximately the same as the present style carburetor. Without this kerosene has a bad effect on the engine. That has been the only obstacle to this commercial use of kerosene, and this now promises to be overcome in a satisfactory way."

In reference to the claims put forth by the chemists concerning alcohol as a commercial fuel, Professor Lucke summarized their position thus:

"Engineers assume the responsibility of making use of what we have, while the chemists are seeking to make something else. Occasionally these two separate lines of effort come into conflict, and here is a case. Chemists have been assuming that we could not use kerosene for autos or motor boats. This has led them to seek a new fuel. We have found in the meantime that we have had to use kerosene for cars, and so doing do not have to search and experiment for other fuel. My personal opinion is that alcohol will never compete with petroleum until petroleum becomes scarcer than it is at present."

South African Buchu and Other Medicinal Plants.

While considerable quantities of South African medicinal herbs have been shipped to European and American pharmaceutical chemists, a large number of plants that are known to possess curative properties are still used only by the Boer and native population. Buchu leaves are a notable instance. The British and American pharmacopoeias list merely the variety Barosma betulina (Barosma crenata), which is obtainable only in small quantities and at comparatively great expense. At least nineteen varieties of Barosma are commercially available in the Port Elizabeth district, three of which, when submitted to London for testing, were reported to possess the properties of betulina.

A local collector has obtained quantities of buchu leaves and herbs, which have been classified according to their African medicinal reputations, and is willing to forward samples to scientific laboratories or to manufacturing druggists who will undertake to thoroughly test his offerings. He is prepared to supply in commercial quantities, and according to sample, all varieties in his collection. His address may be obtained from the Bureau of Foreign and Domestic Commerce or its district and co-operative offices.

At the next meeting of the board of directors of the Davison Chemical Corporation the membership is to be increased from eight to ten by the election of Waldo Newcomer, president of the National Exchange Bank, of Baltimore, and William H. Grafflin, chairman of the board of the Union Trust Company, of Baltimore, and a fertilizer expert.

STUDIES OF ANILINE POISON IN UNITED STATES, BY GEORGE P. ADAMSON

An Address Delivered Before the Symposium on Occupational Diseases of the American Chemical Society, Friday.

Aniline poisoning in the United States was, until the present foreign disturbance, given but slight consideration, and few precautions were taken to protect the men working aniline or nitrobenzol.

The introduction of the manufacture of nitrobenzol and aniline in this country brought very quickly to the attention of manufacturers and physicians the necessity of precautions. Very few, if any, physicians had ever seen, or even heard of, aniline poisoning, and were not prepared to recognize or treat cases when serious enough to be called to their attention. England and Germany have reports on many cases, and it was necessary for the manufacturer in this country to ascertain the best method of treatment.

We have noted for at least ten years that men working in the fumes of aniline would complain of dull headaches and dizziness and show the familiar bluing of gums, lips and ears, as well as the rash on the arms, particularly when the skin came into contact with aniline oil. We have also noted that all cuts or sores, if exposed to fumes or oil, were quickly infected, causing pain and swollen limbs.

Not Serious Results.

Our observations led us to believe that working in the fumes of aniline does not lead to any serious cases, nor is the poisoning cumulative. The only serious cases are from absorption, caused by splashing the oil on the body without immediately removing same by washing.

Cleanliness is an absolute necessity, and bathing before leaving the plant should be positively required; also washing of hands and face before eating. A dose of Rochelle salts is given every day. A kit containing wash brush, soap, tooth brush, gloves, wooden soled shoes, goggles and respirators is supplied to every man. In case of aniline slashing on the skin the man is washed with dilute acetic acid. Then the man is washed with water under a shower, clothing washed and dried, usually given a dose of Rochelle salts and compelled to drink a liberal quantity of milk, which should be supplied daily. A locker room with sufficient lockers, showers and towels should be supplied and a lung-motor, oxygen, first aid crew and hospital are a necessity.

Men Sympathetically Poisoned.

We are surprised to note that many instances of slight poisoning developed in men who were not actually employed in the department. Mechanics who were called to make slight repairs in and about the buildings, etc., were slightly poisoned. We found in every instance that the men who developed the symptoms wore old shoes, the soles being worn so as to allow sufficient absorption through the feet to produce the symptoms. Since using the wooden soled shoes this difficulty has been overcome.

Before employing men in the departments where aniline is used we compel the applicant to submit to a physical examination, and if rejected he is not employed. A blood test is made on all men.

The first serious case was an Austrian, who, in his haste to quit work, placed his shoes under a tank in which aniline was used. During the day some aniline was splashed in his shoes, and after he had put them on and was working in them for a few hours he became unconscious and his body turned blue. The physician was called and, looking at the man, asked for the priest. The man was removed to the hospital, however, and in a few days had entirely recovered.

The next case was of a man who was cleaning a still. Removing his rubber gloves and absorbing it through his hands, he became very rigid and was unconscious for hours. He was at work again in six days.

Tar from Old Still Poisoning.

The third case was of an American who was removing tar from an oil still. His shirt sleeves became saturated with aniline at the elbows and his trousers at the knees. He removed his rubber gloves and substituted canvas ones. After wearing the canvas gloves for a period of about two hours they were completely saturated. He was at home for two weeks. This man was 56 years old.

Another case of this poisoning was of an American 27 years old. He was found asleep on top of the still. The ashes upon which he was lying were saturated with aniline, due to a leaky pipe connection. He was partly overcome when awakened. He was home for one week.

The fifth case was of an American 72 years old. There being a defective cock on the condenser, the plug broke while turning and the aniline splashed in the face and mouth of the victim. He swallowed about two teaspoonfuls of the aniline and was home for five days.

The sixth case was of an Austrian twenty-nine years old. He was tearing out old stills, and his shoes being poor and the mule-skin gloves that he was wearing becoming saturated, he was overcome with it and was home for one week. The seventh case was of a Slav twenty-eight years old. This case is identical with the sixth.

The eighth case was of a Slav, twenty-eight years old, who was removing tar, etc., from still. The tar contained aniline, and his clothes became saturated. He was home nine days.

Removing Defective Plug.

The ninth case was that of an American thirty-one years old, who was removing a defective plug from the cock. The aniline held in gas chamber above cock was released when the plug was removed, and it splashed over his hands and arms. He neglected to wash immediately, and was at home for eight days.

When the vapor, or nitro phenols, amido phenols and beta napthol, come into contact with the skin they produce a very irritating rash: The parts present a swollen and very red appearance, which, if not treated, becomes very sore. The best treatment that we have found is to wash the affected part carefully with soap and hot water, then wash with 5 per cent. hydrogen peroxide. Remove the peroxide by washing, carefully drying and rubbing with glycerine. An ointment consisting of lead acetate and vaseline is also very effective. Greasing of the hands, face and exposed parts is a good preventive.

We have noticed that the blond type of men are more susceptible than the darker types.

WHAT DR. ALICE HAMILTON HAD TO SAY AS TO MUNITION PLANT INVESTIGATIONS

Dr. Alice Hamilton, who since 1909 has been investigator of occupational diseases for the Federal Bureau of Labor Statistics, is in New York, where she has come from her investigations into New England munition plants, and to tell chemists at the convention of the American Chemical Society, which is being held this week, of the dangers to which the workers are exposed and the precautions which may be taken.

These precautions, Dr. Hamilton says in talking about her work, can never entirely do away with danger. And as she describes her work and the things which she has seen and discovered in the factories the new industry which has grown up in this country since August, 1914, seems but one tense scene in the drama of the European war. Not very much is said about it when men die overnight because of dark orange fumes which they have breathed, but the fact remains that they do die in this way.

The way in which what Dr. Hamilton calls "mad little contract plants" spring up in the twinkling of an eye and cannot even shut down for one day for the plumber to get in better exhausts to lessen the sickness which overtakes the workmen, sounds, as she tells it, like a feverish dream, or the unnatural setting for a moving picture. In the great hurry to make munitions and get them off to the scene of war and thus fulfill our contracts they have not been careful enough about these ominous and mysterious dark orange fumes, which kill men as quickly and almost as painlessly as if the man had been shot through the heart.

The deaths of the men seem mysterious even to some unaccustomed physicians; they have been diagnosed as due to heat prostration, alcoholism, and other things. And it is strange, of course, to have a man go to bed seemingly well and then wake up with dyspnoea, or difficult breathing; have a kind of bloody froth come from his mouth, and then, quite suddenly, stop breathing altogether.

The orange fumes are not mysterious to Dr. Hamilton or to any one who knows. They are simply the fumes of the oxides of nitrogen, and these fumes may come from every high explosive except fulminate of mercury, since all the others are nitrated compounds. These fumes do not choke a man at once, as do the fumes of a chloride. It would be much better if they did, so that he could realize his danger and escape it. As it is, he keeps on breathing them in, and six or eight hours later the trouble begins. This is the most common danger in the factories, according to Dr. Hamilton, although this is not really common, few deaths having occurred.

Before the war Dr. Hamilton had been investigating all occupations in which poisons of any kind were used in manufacture, taking up one trade at a time. When the war came, she gave up all other trades for the investigation of munition factories.

"The old plants have worked out a system of precautions as complete as any which can be worked out," she says. "It is the new plants which are careless, too much in a hurry, and with whom I am concerned. The three most dangerous manufactures are picric acid made for the French; T. N. T., made for the British and the Russians, and the gun-cotton, which is made, I believe, for all of them. All that I can do is to report conditions to the Federal Government, which has little power to act in the matter. Practically all that can be done is by the individual States, working along their own lines on the Federal report. The chemists, whom I am telling about my work this week, have a great deal to do with the system of protection in the plants, where they often act as consultants. They are usually the only men who know the characteristics of the poisons which are handled."

New Jersey and New England are the only territories which Dr. Hamilton has yet investigated. New Jersey is the worst of all, she says. Before this work she investigated chiefly the lead trades, and those which deal with enameling and glazing.

Scarcity of Chemicals for Canadian Public Works.

There appears to be a scarcity of chemicals used in filtration plants of waterworks system at St. Stephen, New Brunswick.

At Fredericton, the capital of the province, a shipment of aluminum sulphate and of hypochlorite was secured a few months ago at a cost of about $2,000, or four times the price paid prior to the war. The officers in charge of the plant have been requested to find out if any other chemicals suitable for filtering can be secured at a lower figure.

A New Flotation Oil.

By MAXWELL ADAMS, Reno, Nev.

Considerable interest has recently been developed in sage-brush oil because of its possible utilization as a flotation agent in the mining industry. A list of some of its physical properties, together with the method used in its extraction, may prove of interest at this time.

Something over a year ago a study of the essential oils in desert plants was begun in the chemical laboratory of the University of Nevada. None of the oils so far studied possess properties of special interest to engineers, except the oil of sage, Artemesia tridentate, which has exceptional power as a flotation agent. This plant, known as common sage brush, also called black sage, is widely distributed over the semi-arid West, being found quite generally on most of the dry plains and mountains west of Missouri.

The method of extracting the oil followed in these experiments is very simple. The leaves, twigs and small branches are placed in an air-tight drum, having a capacity of about twenty-seven cubic feet. Steam is admitted through a number of small openings at the bottom of the retort, and the pressure maintained at twenty to twenty-five pounds per square inch for three hours. The escape of the steam from the retort is regulated by allowing it to pass through a stop-cock into a condenser. The water in the receiver is drawn off from time to time and the oil, which is insoluble and floats upon the water, is thus collected. At the end of two hours most of the oil has been driven out, though traces continue to come over for a much longer time. By raising the pressure, the time required could probably be shortened and the yield increased, but the lack of laboratory equipment has prevented the carrying out of this experiment.

The stock wood, bark and branches contain no oil, the distribution of the oil being limited to the leaves and young shoots. There is a seasonal variation in the amount of oil contained. Samples collected on different dates give the following amount of oil: May 1, 0.42 per cent.; May 27, 0.6 per cent.; June 30, 0.72 per cent.; August 1, 0.9 per cent.; September 10, 1.0 per cent. The increase appears fairly constant from early spring, when the leaves first appear, until light frosts occur in the autumn. When the plant is air-dried there is some loss of oil, as the following data will show: Two 100-pound samples were collected at the same time. One was distilled when green, the other was air-dried for ten days before distillation. The green sample yielded 275 grams and the dried sample 248 grams of oil, showing a loss of about 10 per cent.

A laboratory experiment can furnish little data useful in forming an estimate of the commercial cost of production. A man working for six hour, and using a pair of common pruning shears, collected twigs which yielded one pound of oil. Since only a small percentage of the oil is lost if the brush is dried, the most economical method of production would perhaps be to collect it in large quantities, by using a tractor engine and a drag, in some such way as land is cleared for farming. When the brush is dry, the leaves and young shoots are easily shaken from the limbs. Thus the amount of material to be distilled would be greatly diminished and the oil perhaps obtained at a cost and in quantity sufficient to make it available as a flotation oil, if not alone, possibly as an ingredient, to increase the flotative power of other oils.

The crude oil is dark in color. When redistilled with steam it is water-white at first, changing gradually to a straw-yellow color upon standing. It has the following physical properties:— Density at 15 degrees C., 0.9206. Refractive index at 20 degrees C., 1.4732. Rotation at 20 degrees C., —4.69. At 98 degrees C., a light oil, with a very sharp and pungent odor, begins to distill, but only after the temperature is above 165 degrees C. does rapid distillation take place. At 180 degrees C., the oil turns dark and decomposition begins. At a pressure of 12 mm., and below 125 degrees C., almost all the oil can be distilled.

The chemical properties of the oil are as yet undetermined. There are small quantities of alpha and beta pinene. The main part of the oil has a camphor-like odor and taste, but has failed to give the ordinary tests for ketones. The fraction boiling at 175 degrees and 180 degrees centrifugal has some of the properties of ordinary cineol, but is acted upon by metallic sodium, which indicates that the chief ingredient is not cineol. The chemical composition, which has little interest in this connection, will be worked out later. The important question for the engineer is:—Can the oil be produced in quantity and at a cost that will make it available for ore flotation?

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OIL CONFERENCE.

(Continued from page 63.)

no less than to get out of their refining apparatus only those products for which there is a big market—at present gasoline and lubricating oils. They don't want kerosene; can't sell it, but they want lots more gasoline. Now, in point of fact, they have gone a considerable distance in this direction and the same crude oil today produces much more gasoline and less kerosene than it would have given under the practice when the latter was wanted and the former was hard to sell. Heat and pressure and reagents are the instruments.

Another subject discussed was the effect of the war on the petroleum industry, more especially in relation to medicinal oils, and still another was the role of the chemist in the conservation of petroleum resources.

The Gasoline Problem.

Owing to the increase in the cost of gasoline the problems connected with the supply of suitable motor fuels have aroused great public interest. In fact, the so-called gasoline problem has become the most popular problem of chemical industry.

The question of gasoline substitutes has received considerable investigation and the opinion has been repeatedly expressed that either denatured alcohol or benzol, or suitable mixtures thereof, hold out much promise; but Dr. Raymond F. Bacon, the director of the Mellon Institute of Industrial Research and an authority on petroleum and its products, is of the opinion that the real solution of the gasoline problem is dependent upon the establishment of close co-operation between the automobile manufacturers and the refiners of petroleum. Dr. Bacon maintains that the problem actually resolves itself into one of automobile engineering, since he thinks that the manufacturers of self-propelled vehicles should adapt their motors to the consumption of those products suitable as fuels which the petroleum refiner can economically manufacture.

In discussing the present-day problems of the petroleum industry Dr. Bacon has pointed out a number of ways in which the automobile manufacturer can advantageously collaborate with the refiner of petro eum. Automobile engineers should have available complete information relating to the specifications and use of petroleum products for internal-combustion purposes.

So far, little has been accomplished in devising ways and means of using the lower grades of gasoline in internal-combustion engines; no exact work has been carried out on the efficiency of mixtures of casing-head gasoline with heavier distillates as compared with straight cuts, and while it is known that gravity is not indicative of the value of a light petroleum distillate, sufficient data has not been accumulated to educate the public to a rational basis of sale. These are problems which require coperative research work by both the producer and the principal consumer of motor fuel.

Dr. Bacon has also called attention to the fact that illuminating oils, that is, the various heavy grades of kerosene, are being used more and more in the motors of heavy trucks. He stated that in order to use these petroleum distillates in the ordinary motor, it is only necessary to heat the carburetor by means of the exhaust gases. It is true that the motor must be started with gasoline or alcohol, but a small supplementary tank may be easily attached. So far, the great drawback to the use of kerosenes in motors is their production of tarry products in the sylinder, and consequently a large number of mixtures have been proposed to obviate this difficulty. Perhaps kerosene may be chemically treated in such a way as to solve this problem, but automobile engineers are hopeful that there will be devised a gas-supplying apparatus wh'ch will give no trouble from coking or partial combustion. Dr. Bacon is authority for the statement that promising progress is being made in this direction.

Who Dr. Bacon Is.

on June 29, 1880. Immediately following his graduation from De Pauw University in 1899, he received the appointment of instructor in chemistry at that institution, and in June, 1900, he received the degree of A. M. In 1900 he was appointed professor of chemistry at Vincennes University, which position he resigned in 1901 to accept a feiowship in chemistry at the University of Chicago. In 1904 he received the degree of Ph. D. from the last mentioned institution.

Upon the completion of his graduate work at Chicago, Dr. Bacon became assistant manager of the La Sal Copper company, at Cashin, Colo. In 1905 he received the appointment of chemist in the United States Bureau of Science, Manila, P. I. During his five years' service in the Philippines, Dr. Bacon published a number of papers on the chemistry and technology of essential oils and on the economic possibilities of the Philippnes. For the most part, these contributions appeared in

In charge of discussion on "Oils and Motor Fuels," as chairman of the meeting held in Rumford Hall, Chemthe Philippine Journal of Science.

Dr. Raymond Foss Bacon, director of the Mellon Institute of Industrial Research of the University of Pittsburgh, was born in Muncie, Ind., ists' Club, Saturday.

In September, 1911, Dr. Bacon resigned from the Government service in order to accept the appointment of senior fellow on the petroleum fellowship in the department of industrial research of the University of Pittsburgh. In March, 1912, he was seleced as associate director of the Mellon Institute of Industrial Research, and in April, 1914, following the death of Dr. Robert Kennedy Duncan, he was appointed director of that institution.

Since 1911 Dr. Bacon has been actively engaged in the direction of industrial research in the University of Pittsburgh. He is the inventor of processes now in successful commercial operation for the manufacture of gasoline, the recovery of cuprous sulphide from ores, and for hydrogenating cottonseed oil. He enjoys a high reputation as an expert in petroleum refining technology and is the joint author of a work relating to that subject.

Chemists Needed for Peace, Not for War, Argued at Final General Session.

The country is to have far more need of its chemists and its rapidly growing chemical industry in the near future than the allies have now, said William H. Grosvenor, at the final session of the American Chemical Society convention, and the chief concern of all chemists should be to see that after the war their plants are converted to the needs of peace with an eye always to their reconvertibility to the needs of the war, which may come to this country later.

"Convertibility of Plant" was the subject for this final meeting which was held in the Grand Central Palace, and the discussion, which was general, was led by Mr. Grosvenor. In an opening speech he summed up the situation as he sees it, and urged that all chemists with ideas or suggestions as to the best way of converting munition plants temporarily to the uses of peace should get together and co-operate, in the short time that is left before he close of the European war, in working out methods to this end, so that they will not be overwhelmed by the foreign competition which will commence again at the close of the war, and so that this country will not be dependent, as it has formerly been, upon the chemical products by Germany, France and England. Mr. Grosvenor said:—

"Munitions plants must be made into industrial centres until such time as they shall be needed again. History, such little history as this country has, shows that within five or ten years after a war in Europe this country becomes involved in war. The people of the country must face this probability. Especially the chemists must face it. And it is essential to our national life that we make our chemical plants a permanent thing and not just to tide over the war-time, if we are to keep our independence.

"We have always been considered a free country, but until this war commenced we were becoming more and more hopelessly enslaved to France, Germany, and England. In less than ten years, Germany would have controlled the metal industry of the United States. Most of us do not realize the value of these things for which we were so dependent upon other countries. We should supply in this country everything used in the western hemisphere, through to the finished product."

He spoke in detail of serium, metallic magnesium, and other products which we are now making for the first time, and made clear their importance in the life of the country.

"Never has there been such a chance," he said, "to find out how we have been owned and controlled abroad. It is especially important to those of us who have at heart the national ideal of independence that we should keep ourselves at the same time independent of other countries and in close contact with them. It is becoming recognizable to the national government that we must hold together the nucleus of some of these industries, or we shall pay a terrible price for our neglect."

Saturday afternoon and evening were given up to visiting the Second National Exposition of Chemical Industries in Grand Central Palace. There was an excursion up the Hudson River in the afternoon for the American Electro-chemical Society and for as many of the members of the American Chemical Society as could be accommodated.

WHAT THE LADIES DID, WHERE THEY WENT AND WHO THEIR OFFICIAL HOSTESSES WERE

A Full Week of Entertainment, Not Forgetting Shopping Tours of the Big Stores, Was Provided for Their Pleasure and Edification.

From the warm welcome first extended on Monday to visiting ladies of the three societies at the Chemists' Club by a committee of ladies, of which Mrs. Frank Hemingway was chairman, followed immediately by a tour of inspection of the exposition under the guidance of Mrs. Bernhard C. Hesse and others, every moment the visitors could spare was filled.

Theatre parties, an automobile tour to Hastings and return, with 30 cars filled with sight-seeing guests, luncheon overlooking the river, visits to the big stores—ah, those big stores and especially Tiffany's—these were a few of the entertainment features provided. Lack of space prevents full justice to this feature of "Chemists' Week," but that the efforts of the entertaining ladies' committee were both appreciated and successful every chemist and chemist's wife is fully convinced. The program of features, which was carried out in entirety, was as follows:—

Monday and Tuesday.

Welcoming the Visiting Ladies at the Registration Rooms (Continental).
Mrs. Frank Hemingway, The Chair.
Visiting the Chemical Industrial Exposition.
Mrs. Bernard C. Hesse, The Chair.

Tuesday.

8 p. m.
Reception at Hotel Astor.

Wednesday.

10:30 a. m.
Meeting, Chemists Club for an Automobile Tour Along the Hudson.
Mrs. J. M. Matthews, The Chair.

1 p. m.
Luncheon at Lonue Vue, Hastings-on-Hudson; return to New York 5 p. m.
Mrs. J. M. Muir, The Chair.

Thursday.

10.30 p. m.
Meeting, Chemists Club, for a visit to Altman's and Tiffany's Stores.
Mrs. R. N. Shreve, The Chair.

1 p. m.
Luncheon at the Woman's City Club.
Mrs. M. Loeb, The Chair.
Luncheon at the Woman's University Club.
Mrs. R. N. Shreve, The Chair.

8 p. m.
Theatre Party, Complimentary, to Visiting Ladies only.
Mrs. M. Toch, The Chair.

Friday.

2 p. m.
Strand Theatre Party.
Mrs. Charles Baskerville, The Chair.

8 p. m.
Banquet.

Saturday.

Visiting Chemical Industries Exposition.
Mrs. Bernard C. Hesse, The Chair.
Hudson River Excursion.

CHEMISTS APPEAL TO GOVERNMENT TO ESTABLISH A "GET-TOGETHER BUREAU"

At a meeting in Havemeyer Hall Saturday morning of the Biological Chemists, the following resolutions were passed unanimously:—

"Whereas, The permanent and efficient growth of American industries requires a constant and growing supply of specially trained employes; and

"Whereas, The proper assimilation of the country's personal talent, both native and foreign, equally require the proper placing of individuals in localities and in work wherein their training and abilities will be most productive to themselves and to the general welfare of the country; resolved

"Therefore, That we earnestly urge the United States Government to provide an adequate special bureau, the duty of which shall be to investigate the demands and needs for employes of all kinds, to inventory and classify, so far as possible, all persons, both native and foreign, needing or seeking employment, and to assist in bringing the employes and possible employers in contact with each other."

Resolution by G. Grumby Jordan, Columbus, Ga.:—

Recognizing the laudable and growing movement throughout the union to educate the youths of the country industrially and scientifically, and believing that Americans should be encouraged in securing and filling the more important and responsible positions in the establishments desiring such employes, and knowing this would in turn be serviceable to the industrial establishments themselves;

Be it resolved, That this society urge upon the government and co-operate with it in making a thorough investigation along this line to the end of first ascertaining the extent of the movement named.

Secondly, to assist both the employer and the employed in bringing them together on the lines indicated.

Following the adoption of these resolutions, N. S. Potter, Jr., suggested that in order to make them effective a proper committee should be appointed to follow them up and do the work necessary to bring about the co-operation desired.

As the result of the discussion which followed, it was the unanimous opinion of the meeting that this committee be appointed by the proper officers of the American Chemical Society after carful consideration as to the personnel.

UNITED STATES GOVERNMENT AND SPECIAL ASSOCIATION EXHIBITS AT EXPOSITION.

The **United States Bureau of Mines** lent able support to the exposition by its elaborate display of recording instruments, life saving apparatus and appliances used in conducting its investigations and research work in connection with chemical plants and oil works. Latest models of pulmotors, smoke helmets, acid hoods, resuscitators and reviving apparatus were placed on exhibition.

The **Bureau of Foreign and Domestic Commerce** was very much in evidence through its presentation of data and statistics covering the chemical and dyestuffs trades. Many visitors registered at the booth of the department applying for information which has been published in book and pamphlet form by the bureau in the course of the last year or so.

The exhibit of the **United States Bureau of Census** was very much the same as that of the Bureau of Foreign and Domestic Commerce, with the exception that the information and statistics compiled and distributed by the former covered the field more in detail and related chiefly to the rapid expansion of the home chemical industry.

A booth offering numerous accommodations for the members of this organization and, in fact, for all visitors at the exposition, was furnished by the **American Chemical Society's** management, immediately behind the main stairway leading from the Lexington avenue front of the Grand Central Palace building. At the back of this booth, is a diamond-shaped frame, outlined with electric lights, was shown a handsomely colored reproduction of the society's pin and on a large table, to the left of this exhibit were several "dummies" of the forthcoming "Decennial Index of Chemical Abstracts." Several additional wicker tables and chairs, for the convenience of guests of the society completed the equipment of this booth.

A booth, fitted up with numerous comfortable wicker and leather chairs and a few tables, with a plethora of current literature on chemistry, constituted the offering of the **Chemists' Club** for the convenience and accommodation of visiting members of the American Chemical Society and other organizations, many of whom also availed themselves of the hospitality extended to them in the club's handsome building at 50 East Forty-first street.

An accommodation booth, equipped with many wicker and leather chairs and writing tables was maintained throughout the exposition by the **American Electrochemical Society,** which was founded in 1902 and which has now a membership of 1,600 residing in 43 States and 25 foreign countries.

A registration and accommodation booth for visiting mining engineers, whether members or not, was maintained by the **American Institute of Mining Engineers** on the south side of the main exposition floor.

The **Welch Grape Juice Company** had two exhibits, one at the south side of the main floor, near the main stairway, and the other on the mezzanine floor, close to the elevators, in both of which it dispensed its product to the thirsty and booked orders from handlers.

The **American Red Cross Society** had a small booth, from which it called for members and otherwise solicited subscriptions to the worthy enterprise which it is pushing with especial zeal.

Nearly 450 Present at Banquet at Waldorf-Astoria on Friday Night.

About 450 were in attendance at the banquet at the Waldorf-Astoria on Friday night. The banquet hall was beautifully decorated and tables, which were arranged for parties of eight, each contained most attractive floral decorations.

Dr. William Jay Schieffelin acted as toastmaster and briefly introduced the following speakers, all of whom delivered short addresses:—Dr. C. F. Herty, Dr. Arthur B. Little, Hon. Charles H. Scherrel and Mr. Frank S. Washburn. Dr. Little responded to the toast, "The Chemical Engineer as a World Factor." Mr. Scherrel spoke on "The Two Americas," while Mr. Washburn's subject was "The Day of the Chemist."

The banquet was brought to a close shortly after 11 with the singing of "Old Lang Syne," and the assembly then repaired to the ball room, where dancing was indulged in until the wee sma' hours.

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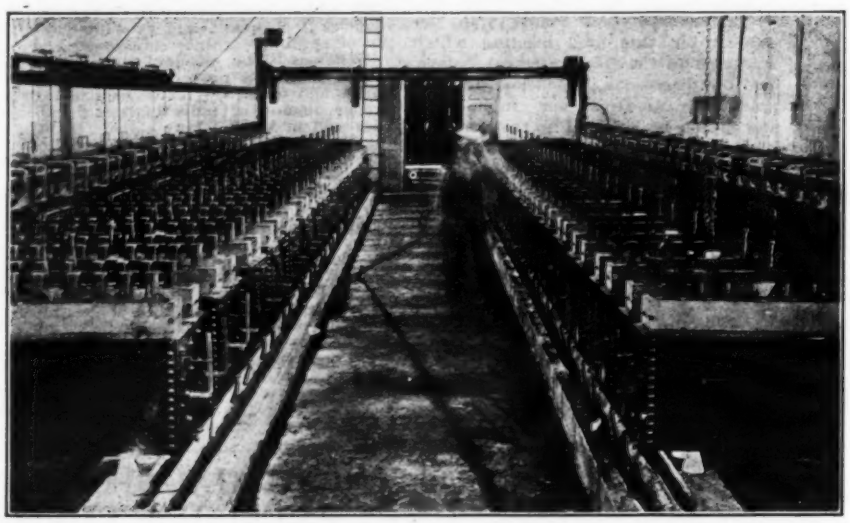

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Outlook of Drug Industry.

Address of Harold Hibbert, Presiding Officer of Industrial Conference.

The list of articles placed on the prohibited list early in the war by the British Government embraces the majority of the products which we, in this country, would be compelled to replace by home manufacture in the event of war

If we examine the situation that confronted us in the chemical field in 1914 the outstanding feature is that the quantity and quality of highly trained chemists, and especially of chemical engineers, were quite inadequate. There has never been a time when the American capitalist was more willing to invest his money or "take a chance" on the development of some one or other chemical industry. It is to be regretted that a number of failures were directly attributable to the poor training received, either by the chemist in the scientific research work or by the chemical engineer on the industrial side.

With regard to the scientific side, the average university professor has considered it incompatible with the professional dignity to spend any time on industrial problems—in many cases has never been given the opportunity—while with respect to the industrial development, in spite of the progress made by the establishment of various newer industrial research institutes, the deplorable fact remains that the engineering side in these is almost altogether neglected.

It is not unreasonable to request that those firms whose profits have been so abnormally swelled by the conditions of the last two years, should now come forward and subsidize such universities as are willing to devote some portion of their time and equipment to the development of the purely scientific, as contrasted with the commercial side.

What is to be the future of the industry? We shall have a case of the "survival of the fittest," and it would seem that such survival will be conditioned by several factors:—

1. The ability to manufacture all the raw products required.
2. A highly efficient technical staff.
3. A capable sales organization.
4. The existence of adequate home or foreign markets, or both.
5. Suitable tariff protection.

With regard to the first item there ought to be no question, in view of the enormous increase in the output of coke oven by-products, of obtaining an adequate supply of raw materials at a nominal price, and the industry might well begin to consider, if it is assured of satisfactory safeguards along these lines.

The question of an adequately trained technical staff has already been touched upon. To insure the heartiest co-operation of the scientific worker in any industry he must be allowed to participate to some extent in the profits accruing from his labor.

The more recently established industries devoted to the manufacture of pharmaceutical products have a legitimate claim to the necessary protection from the government until they are placed in a sufficiently sound position to warrant open competition in the markets of the world.

Gossypol, the Toxic Substance in Cottonseed, as Studied by North Carolina Scientists.

W. A. WITHERS AND F. E. CARRUTH.

In view of recently expressed views that "cottonseed poisoning" is the result of dietary deficiencies rather than of a poison, the authors have repeated previously reported experiments with rabbits, etc., and have also fed rats and pigs. These results indicate clearly that cottonseed and gossypol therefrom are highly toxic to rabbits, rats and pigs, and that the ether extracted kernels are rendered non-toxic by removal of gossypol. Cottonseed meal and flour were found toxic to rabbits, but the flour produced no ill effects on rats.

The following table shows the results of experiments with four small pigs in pens:—

1. Cottonseed meal and cornmeal. 1.3.—Fatal in 50 days; gain 2 pounds.
2. Cottonseed meal and wheat bran, milk and green.—Fatal in 45 days; gain 15.5 pounds.
3. Gossypol on cornmeal and wheat bran.—Fatal in 48 days; loss 2 pounds.
4. With gossypol extracted from cottonseed kernels and cornmeal 1.3.—Not fatal in 155 days; gain 107 pounds.

It will be seen that where gossypol was present (even with vitamines Diet 2) toxic results ensued. Diet 4 was not perfectly satisfactory, but the comparative results are significant. Similar results were secured with five other pigs on this diet. Two pigs on cottonseed meal, corn, wheat, bran, milk and molasses were not visibly affected by cottonseed meal in 90 days.

Some quantitative data with rats show them much more resistant to cottonseed and gossypol than rabbits. Nevertheless, these are clearly toxic to rats. Thus, 45 per cent. cottonseed flour causes no ill results in rats, while 30 per cent. cottonseed, or gossypol, 0.1 per cent. (equivalent to 15 per cent. cottonseed), cause quick decline. Twenty-eight per cent. ether extract of cottonseed flour in a rat diet is highly objectionable, while 7 per cent. is tolerated easily.

The variation in toxicity to rats is explained by the removal of gossypol in the manufacture of the meal from the kernels. Gossypol streams forth from the "resin glands" of the seed when the surrounding cellulage layer is moistened. The gossypol is then in part dissolved by the oil and the rest is spread over the resultant meal. As a phenol sensitive to oxidizing agents, gossypol may further disappear from the meal on aging. Thus various meals may vary in toxicity.

Without affirming the adequateness of a prolonged diet of cottonseed meal with corn meal alone, it is not felt that the deficiency theory will explain the quick deaths of pigs and other animals fed on cottonseed meal, although with all other dietary factors adequate the toxicity may be more or less overcome.

It is planned to ascertain by feeding experiments, chemical analysis, and close attention to details in the manufacture of cottonseed meal, whether gossypol may not be eliminated from the meal to a still greater extent than at present.

Grease of the Soy Bean and Jack Bean.

By ISAAC F. HARRIS.

Research and Biological Laboratories of E. R. Squibb & Sons,

New Brunswick, N. J.

The proteins of these seeds have been isolated by various methods. The soy bean albumin (called "legumilin" by Osborne) has been shown to carry all the urease value, while the globulin and diffusible substances are inactive. The albumin has been shown to be highly toxic and agglutinative of red corpuscles of various warm-blooded animals, analogous to the ricin of Osborne, Mendel and Harris. One milligram is an M. L. D. for a guinea pig. A true immunity may be produced, according to methods of Ehrlich for ricin. An active immunity towards glicin appears to be protective against ricin.

Since new biological properties have been observed for the albumin, not common to all the leguminosa, a new name is suggested to differentiate between this protein and the albumins of various leguminous seeds. From its origin in the soy bean (Glycine Hispida) the name glicin is proposed in harmony with the terminology of ricin, crotin and abrin.

The proteins of the Jack bean (Canavalia Ensiformis) have been isolated and their properties studied in like manner. The urease value of this seed is shown to be many times greater than that of the soy bean, confirming the report of E. K. Marshall.

The urease activity is associated with both the albumin and the globulin. This albumin is highly toxic and agglutinative, of the nature of ricin, glicin, abrin and crotin.

One-tenth of two-tenths of a milligram of purified urease will cause complete agglutination of one c.c. of washed rabbit corpuscles in two hours.

Other Exhibitors at the Exposition of Chemical Industries.

The **Electro Bleaching Gas Company,** Niagara Falls, N. Y., with offices at 18 East 41st street, this city, had an elaborate display of its bleaching apparatus, featuring liquid chlorine, a "100 per cent. bleaching agent" for textiles, etc. Liquid chlorine is also used for the sterilization of water and disinfecting sewage.

The **Tennessee Coal, Iron and Railroad Company,** Birmingham, Ala., had for its exhibit a sample bag of "Duplex Basic Phosphate," a fertilizer produced from open hearth slag.

The **City of Newark, N. J.,** distributed maps and literature regarding the new Port Newark terminal, located on the meadows fronting Newark Bay. Several large piers have been constructed on this property, which has been improved according to modern engineering standards.

The **Carolina, Clinchfield & Ohio Railway,** operating through the rich coal and mineral fields of the Carolinas and Tennessee, maintained an information bureau at the exposition.

The **Product Sales Company,** 423 Equitable building, Baltimore, Md., agents for the Cherokee Chemical Company, Kings Creek, S. C., exhibited samples of feldspar, silica and clay.

Drugs and Chemicals in the Merchants' Association of N. Y. Year Book.

Although set in the smallest type, the membership roll of the Merchants' Association, as printed in 1916 Year Book, occupies 170 pages of the Year Book, of which 78 are devoted to the alphabetical and 92 to the classified lists, respectively, as compared with 53 and 81 pages, respectively, in the 1915 Year Book.

Division XII, drugs and chemicals, embodies a very large, representative and influential membership of 229, covering importing as well as domestic interests, in the six subdivisions of drugs, chemicals, proprietary medicines; druggists' sundries; colors, dyestuffs, etc.; miscellaneous chemical products; oils, and paints, varnishes, painters' supplies, etc.

Paint Freight Rate Modification.

Washington, Sept. 29, 1916.

The Interstate Commerce Commission has ordered that pending applications for relief respecting rates on white and red lead from Ohio River crossings and from points taking rates to Montgomery, Selma, Birmingham, Demopolis, Sepocari, Prattville and Wetumpka, Ala., the petitioners are authorized to revise the descriptions in connection with commodity rates to read as follows, without observing the long and short haul provision:

"Paints, viz.: lead, white or red, in kegs (wooden or pressed steel), kite, barrels, casks or pails (pressed steel)."

The commission does not approve any rates that may be filed under this authority, all such being subject to revision, etc.

Marden, Orth & Hastings Co. Have Erected Large Works at Newark.

The Marden, Orth & Hastings Co., Incorporated, manufacturers of chemicals, dyes and dyewood extracts, have recently completed a large plant at Newark, N. J. They own and operate in addition to this, plants in Jersey City, Woodbridge and Milford, N. J. This company has a large plant at Chicago, both for manufacturing and storage purposes and also in Boston. The company's plant at North Sydney, Novia Scotia, has ample facilities for accumulating and storing Newfoundland and Province cod oils from which points shipments can be made direct.

Including among the company's manufactures are ammonium nitrate, aniline oil, aniline salts, azo orange, barium chloride, barium nitrate, beta napthol, blanc fixe, dimethylaniline, nigrosine, nitro toluol, orange No. 2, paranitraniline, phenol U. S. P., salicylate of soda U. S. P., salicylic acid U. S. P., salol U. S. P., sulphanilic acid, sulphur black, sulphur brown, special oils and extracts.

The company acts as sole selling agents for the Robeson Process Company's spruce extract, Industrial Chemical Company's tanning and dyewood extracts and the Virginia Products Corporation's red oils and fatty acids.

NEW IMPORTS REPORTS TO GIVE DETAIL VALUES

New Form Cards and Sheet Reports, on Which Appraisers Are to Make Returns on Importations to Treasury Department, Have Been Substituted for Old Style Records.

Washington, Sept. 29, 1916.

The Assistant Secretary of the Treasury has addressed a communication to the Appraiser of Merchandise at New York, stating that in accordance with recommendations of the former of August 25, C. V. R. (Classification Valuation Reports), report cards, catalogue No. 6431-a, b, c are discontinued and new form of report cards, to be known as 6431-a, and an extension sheet to be known as 6431-b substituted therefore.

Appraising officers will submit all questions concerning values on the new form, which will be supplied by the C. V. R. Bureau, until new forms are printed, when they will be furnished by the department upon requisition.

All C. V. R. reports should be made out in triplicate (an original and two carbons) and should be typewritten whenever possible.

Invoices should not be submitted to the C. V. R., except when value information is required on all or a large percentage of the items of the invoices. In many instances a fair percentage of items extracted and placed upon the report will answer the purpose. When invoices are submitted they should be attached to the C. V. R. report (original and two carbons), stating in the price space the fact that the invoice is attached to the request for information in regard to value. Copies of orders should be attached to the C. V. R. reports (original and two carbons), with the statements in the price space on the report: "Copies of orders are attached." It is observed that the C. V. R. Bureau retain all copies of orders received. If, for any reason, a copy of an order must be returned, request for its return should appear upon the C. V. R. report.

Questions of classification where value is not involved should be submitted when practicable by the C. V. R. report.

Particular attention is called to the request upon C. V. R. reports for the reasons for the appraiser's advance and also for the reasons for importers' charges in invoice value at the time of entry.

When samples are forwarded, the C. V. R. report relating to the samples should be placed in the package containing samples.

Attention is drawn to the date of purchase upon the C. V. R. report; this date should be taken from the invoice and when not indicated thereon the C. V. R. Bureau should be communicated with in order that the American consul may be instructed to have all necessary facts shown on invoices under T. D. 34542 amending the consular regulations. Care should be taken to distinguish between the date of certification of the date that the invoice is made out and the date of purchase.

Whenever invoices are received on which the merchandise is not properly described, as provided for in paragraph C of section 111, or the invoice is not the proper form, as provided for in paragraphs D and W of section 111, you will communicate with the appraiser at New York in order that the American consul may be requested to have corrections made in invoices for future shipment

Headquarters ports are instructed to forward to the C. V. R. Bureau reports on all commodities received that have not been reported upon since September 1, 1916.

Other ports are instructed to send to the C. V. R. Bureau reports on all commodities imported for the six months following the date of these instructions.

Reports should cover only one class of merchandise from one manufacturer or shipper, although various qualities of that class should be included upon one report, but where a number of unit items are to be carried forward on to another sheet the continuation should be used and the items should not be written on the back of the card.

Care should be taken to distinguish between manufacturers and shippers, as this information is very important to the C. V. R. Bureau for filing purposes. Care should also be taken to distinguish between the shipper and merely the forwarding agent and it is not necessary to report the names of forwarding agents.

Whenever an appraisement is made in conformity with a price list, furnished by the C. V. R. Bureau, a statement should be made on the card that the appraisement is made in accordance with such price list, giving the date of the price list. Appraising officers should not delay appraisement, awaiting information from the C. V. R. Bureau, but should make their returns promptly. If the report of the C. V. R. Bureau indicates a higher value, a prompt report should be made to the collector in order that he may order a reappraisement.

The C. V. R. Bureau is now furnishing all ports with card indexes of weekly decisions. It is recommended that the synopsis of the decisions, as appearing upon these cards, be carefully checked with the decisions, and whenever errors are noted the appraiser at New York should be communicated with in order that the C. V. R. Bureau may send out the following week a corrected card.

Flavoring Extract — Spice Trade Merger Virtually Accomplished.

Although no official balloting was resorted to, because of the necessity for obtaining a referendum vote from all members by mail, individual expressions of opinion by those members of the Flavoring Extract Manufacturers' Association, and of the American Spice Trade Association, who attended meetings of these organizations, held in this city last Friday, showed clearly that the preponderance of sentiment in both bodies was strongly in favor of carrying out the proposal, which was first made at these associations' annual meetings at the outset of the summer, for an amalgamation of these associations. The merger proposition was again presented to the Flavoring Extract Manufacturers' Association, at its adjourned annual meeting, in the Hotel Martinique, while this same proposition wasalso considered by the American Spice Trade Association, at a special meeting, called for that purpose, in the rooms of that organization, at 124 Front street. Following a seemingly unanimous indorsement of the proposal by the members present at both gatherings, it was decided to call for a vote by all the members of both associations on a referendum, embodying the proposition which will be sent and replied to by mail.

Special committees representing each of these organizations, which had been appointed at the annual meetings of these bodies to investigate the desirability of the proposed merger, submitted highly favorable reports at these latest meetings, and no dissenting voice was raised when expressions of opinion were called for.

The Flavoring Extract Association's adjourned annual meeting was preceded by a session of that organization's Executive Committee, held last Thursday, when a report was prepared, for presentation to the general body expressing this committee's approval of the amalgamation proposal.

The special meeting of the American Spice Trade Association was presided over by Benjamin H. Old, of Old & Wallace, 80 Wall street, New York city, as chairman.

It is expected that the results of the voting by mail on the merger referendum will be made public within the next fortnight, and that the consolidation of these organizations will be effected shortly thereafter.

Tons of Senna Leaves Sent to United States in 1915-1916 from Madras.

Washington, Sept. 29, 1916.

Senna leaves ranked twelfth among the exports from the Madras Presidency to the United States in the first six months of the current year, aggregating 319,349 pounds (2,851.33 hundredweight of 112 pounds) in quantity and $46,307 in value. In the calendar year 1915 the declared exports totaled 452,192 pounds (4,037.43 hundredweight), valued at $42,512. Exportation of this drug is restricted in order that a good percentage of the supply may remain in the country.

The plant is of the bean family (Cassia augustifolia), and the product as exported consists of dried leaflets. The drug enters largely into medicinal prescriptions.

The present species of senna (Tinnevelly), as also the Alexandrian (C. acutifolia, Delile), were introduced to both Indian and European pharmacy through the Arabs. The former species (the only one grown in India) is fairly extensively produced in Tinnevelly, and recently its cultivation has been extended to Madura and Trichinopoly, districts of South India, and to Poona in Bombay. It is sown on red or black clay loams, fairly liberally plowed and manured, the sowing being in May. Weeding has to be attended to, but irrigation is hardly, if ever, necessary. The season for collecting the leaves is June to December. The yield is said to be 1,000 pounds (two candies) an acre, which allows a handsome margin for profit.

Indian senna is either exported coastwise to Bombay and thence to foreign countries or is consigned direct from Tuticorin. The drug is also imported by India from Arabia, where it is collected from the wild plant and accordingly often much adulterated. It would appear that about 5,000 hundredweight are usually taken by India and re-exported under the name of East Indian senna or Moka or Aden senna. For many years past, however, the imports from Arabia have been declining and the exports of Tinnevelly senna improving.

The purity, high quality, and low price of the Indian article place it in the front rank. In 1887-88 the total exports from India of locally grown senna came to 21,376 hundredweight, valued at 318,869 rupees ($103,451). More recent figures are given by some writers, such as 5,000 candies annually from Tuticorin, but the data for an exact and detailed statement of the total trade are not available. Quite recently a new form of senna has appeared in the London markets from India. This has been shown by Barber to be C. montana, but as a drug it has been found inferior to C. augustifolia.

Later (official) figures covering the exports of domestic senna from British India ports during fiscal years ending March 31 show a sharp falling off in the war year 1914-15, when shipments aggregated only 6,663 hundredweight; but this loss was more than made up in the fiscal year 1915-16, when 34,280 hundredweight were exported.

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SUIT TO FORCE PENNSYLVANIA R. R. TO FURNISH TANK CARS IN HIGH COURT

Department of Justice in Attempt to Aid Oil Independents in Fight for Carriers, Takes Case to Highest Tribunal.

Washington, Sept. 29, 1916.

The Department of Justice has carried the oil tank car cases against the Pennsylvania Railroad Company to the Supreme Court of the United States. This case involves the question whether the Pennsylvania Railroad can be compelled to furnish tank cars to independent oil refiners in Pennsylvania. The outcome of this case will be of the utmost importance to the transportation interests of the country, the Solicitor-General claiming that it is the duty of the railroad to furnish adequate facilities for the transportation of the class of goods which it professes to carry.

The appeal in this case was from an injunction issued by the District Court of the United States for the western district of Pennsylvania restraining the Interstate Commerce Commission from carrying out its order to the Pennsylvania road to furnish oil tank cars to certain independent refiners sufficient to carry the normal shipments from the refineries. The Pennsylvania road argued that the order was beyond the jurisdiction of the commission. The railroad contended that it did not have sufficient tank cars to serve the independent refineries.

91 Per Cent. of Oil Car-Shipped.

In the government's brief it is stated that the total of 250,000,000 barrels of crude oil annually produced in the United States is moved by pipeline, in barrels and tank cars. By far the greater portion of the refined oil, or 91 per cent., is shipped in tank cars. It is the customary practice of railroads generally to transport oil in bulk, by means of tank cars.

The Department of Justice in its brief states:—

The commission made a finding that the railroad holds itself out to transport oil in tank cars. It publishes rates for the transportation of oil in tank cars, owns tank cars and leases them, and the rates published apply to shipments both in cars owned and leased. It has been using such cars for over twenty-five years.

Tank cars for the transportation of refined products are a commercial necessity. The cost of transportation in barrels is prohibitive, and the shipper compelled regularly to use barrels must shortly go out of business.

The movement of petroleum in tank cars is not a dangerous operation, and preparation of the cars therefor requires no peculiar technical knwledge.

Common Law Provides for Carrying Facilities.

In this case counsel for the government argues that the common law requires common carriers to furnish reasonable and adequate facilities for the class of goods which it professes to carry, and says:—

The duty to respond to increased demands such as are reasonably to be foreseen follows from the conceded duty of a carrier to carry, and to carry without discrimination. The obligation to carry would often prove vain if sufficient excuse for failure were that the railroad had no cars available, and it would be easy to furnish such cars as were possessed to the favored shipper only. The necessities of the public in view of the railroad's usual monopoly are sufficient reason for the common law requirement. Competitors are not at hand to supply deficiencies. It is plain, moreover, that the obligation is not simply to furnish safe cars, as the appellee contended below. For the carriage of goods, the requirement is that cars be both safe and in sufficient number.

Whatever may be the common-law obligation to furnish special facilities, however, it is altogether clear that the railroad must provide an adequate number of the kind of cars it specifically advertises and holds itself out to furnish. This limited proposition is sufficient to govern the cases at bar.

The cases are no different than if ordinary box cars were concerned. The fact must be taken as established by the finding of the commission that the appellee railroad company has specifically held itself out to transport oil in bulk and in tank cars.

It may be noted that the railroad in its answer to the complaint before the commission alleged that in the schedules of rates filed for carrying articles in tank cars it stated that no obligation was assumed to furnish tank cars. But the fact of such disclaimer does not appear from the record in the cases at bar. It is not alleged in the petition for injunction nor mentioned in the opinion of the district court. The railroad evidently regarded it as immaterial, and pitched its case in the court on other considerations. Moreover, the obligation seems to be a matter of law, which follows as a necessary incident from the fact of the holding out and the public nature of the carrying obligation to furnish box cars by similar protest against the effect of its acts.

The commission's finding of fact that the railroad has held itself out to carry oil in bulk and in tank cars is not reviewable. Indeed, no other finding would have been justified. The railroad published rates for the transportation of oil in tank cars. It has been the established custom of the railroad at bar and of railroads generally to transport oil in tank cars. The oil industry has developed in reliance thereon. This was found to be economically beneficial and even necessary. For twenty-five years the Pennsylvania Railroad has itself owned hundreds of tank cars, and has customarily transported oil in a vastly greater number of private oil tank cars. The significance of the vast amount of transportation by the railroad in tank cars owned by shippers and private car lines cannot be minimized by the fact if such private contractor does not avoid the obligations incident to public service, and the cars must be treated as the carrier's own.

Having publicly held itself out to transport oil in bulk, and having customarily acted according to its profession, the obligation follows under the common law to furnish tank cars upon reasonable request.

Referring to the amendment of 1906 the brief says:—

Hepburn Act Followed Long Agitation.

The circumstances surrounding the enactment of the amendment demonstrated that it was specifically intended to cover tank and refrigerator cars. The Hepburn act of 1906 was the culmination of a long popular agitation in favor of increased control over railroads, especially with reference to abuses of the so-called private car lines. In general, the railroads did not themselves own oil tank and refrigerator cars, principal kinds of private cars, but leased them from the private car lines. The message of the President recommending the passage of the amendments, the special message of the President transmitting the report of the Commissioner of the Bureau of Corporations, dealing with abuses in connection with refrigerator cars and oil tank cars, the testimony of witnesses before the House and Senate committees, all brought the subject prominently to the attention of the legislative body. The evils were said to be not simply discriminations and rebates by use of allowances to private car owners, but also the power which the railroads had, by failing to provide adequate private car facilities for some communities while furnishing them to others, to stifle the development of communities in disfavor and to ruin particular shippers to the unjust advantage of competitors. The special report of the Commissioner of Corporations, James R. Garfield, sharply called to the attention of Congress in a special message by the President on May 4, 1906, while debates on the bill in both Houses were in progress pointed out specific instances of these evils.

PRODUCTION OF NUX VOMICA IN MADRAS

Strychnine and Brucine Derived From This Source—Shipment to United States for 1915 Totaled 1,470,180 Pounds.

Washington, Sept. 29, 1916.

Among the products exported from the Madras district to the United States in the first half of the current year nux vomica ranked seventh, following skins, cocoanut oil, perrer, coir yarn, indigo and sandalwood, and amounted to 2,666,118 pounds, valued at $134,697. In the calendar year 1915 they totaled 1,470,180 pounds, valued at $52,489.

Nux vomica is shipped in the form either of seeds or of "pickings," the latter being husks or shells washed from the seeds. The product is of commercial value as being the source of the alkaloids strychnine and brucine. With the exception of Ceylon, which exports a limited amount of nux vomica, British India is said to supply the world. In addition to the alkaloids just mentioned the seeds yield a dye, which produces light brown shades on cotton cloth, and an oil employed medicinally by native practitioners in India.

Producing Centers—Characteristics of Seeds

The snakewood, nux vomica, or strychnine tree (Strychnos nux-vomica, Linn) grows wild in the forests and is also cultivated to a limited extent in gardens in India. It is a moderate-sized deciduous tree of the Gorakhpur forests in Southern India, Bengal, Orissa, the Deccan and Karnatak, moist forests in the Bombay Presidency, and deciduous forests all over India. The producing centers in the Madras Presidency are Tanjore, Trichinopoly, Pudukotah, Calicut, Rajahmundry and Nellore. Shipments go mainly to London and New York. Formerly Hamburg was an important mart. The average yearly production throughout India is estimated at 40,000 hundredweights (hundredweight equals 112 pounds). Production is under the control of the Forest Department of the Government of India. The seed is included in the general items of minor forest produce, and the right to collect is usually sold to the highest bidder.

Nux vomica seeds and pickings are obtained from the plumlike fruits of the trees. The fruit is collected and the seeds washed out and dried in the sun, or the seeds are simply gathered from the ground, but in the latter case they have little commercial value. They are roundish, flat, or concavo-convex in shape and silvery in color. The best seeds are known in the trade as fine, bold, and fresh. Their appearance should be "bright," that is, clean and silvery. Each nut contains about a half dozen seeds.

Handling the Output—Prices.

In the forests of Nellore, where the tree is common, the seeds are washed out by a forest tribe, the Yanadis, and a good price is obtained for them. Cochin nux vomica is collected in the dry, deciduous forests at the foot of the Travancore hills and is sold at a low figure to small native dealers, who send it to the merchants. The nux vomica of the eastern coast finds an outlet at Cocanada and shipments bear the name of Cocanada nux vomica. The Madras seeds come from Nellore and several other parts of the Presidency. Madras, Bombay and Cochin are the ports in India from which nux vomica is chiefly exported.

The current quotation for nux vomica in Madras at the end of June was 1 anna 3 pies ($0.025) per pound. Nux vomica is packed in robbins or bags usually of 164 pounds when exported, the shipping ton being 14 to 16 hundredweights net.

PRODUCTION AND USES OF INDIAN TURMERIC

How This Dye and Medicinal Source Is Grown and Treated—Used as Mustard Adulterant.

Turmeric (Curcuma longa) is regarded by some botanists as a native of India, but the finest qualities were introduced into India from China or Cochin China. The plant is nowadays extensively cultivated all over India for its rhizomes (root stock). There are two forms, the hard, highly-colored rhizome used as a yellow dye-stuff and the fairly soft, pale-colored, edible root that is employed as a condiment.

With regard to commercial qualities an authority says the Chinese and especially the Formosan turmeric is considered to be the best, with the Indian produced in Bengal, Pegu and Madras ranking next. So different are some of the forms of turmeric that it has often been urged they must be produced from botanically distinct varieties. In European trade the China, Madras, Cochin, Bengal and Java grades are recognized. Cochin turmeric is a globular tuber and usually appears on the market cut into slices. It is edible, and is possibly to some extent often C. angustifolia (Indian arrowroot) or C. montana, rather than C. longa.

Some writers state, however, that the special qualities of the dye rhizome are more a question of age than of specific distinctions. If left in the soil for a longer period or if dried and stored for some time before being used the tubers assume the dry condition. Exports to the United States have been nearly all for use as a dye. Shipments are in two solid forms, either as rhizome "fingers," which are big, hard and heavy pieces of root, or as "bulbs," a small, round form. The total exports to the United States from all ports in the Madras Presidency for the six months ended June 30, 1916, were 1,745,924 pounds, valued at $108,733.

Cultivation of Turmeric in Madras Presidency.

The districts in the Madras Presidency where turmeric is chiefly cultivated are Erode, Trichinopoly, Karur Salem, Nellore, Cochin, and Cuddapah. The yearly output for the Presidency is estimated roughly at about 3,000 tons, but a good deal of obscurity prevails as to the production and yield of this crop. The returns are given in maunds, a measure that may vary from 82 to 25 pounds; it is often not possible to discover whether the figures refer to dry or green tubers, and, lastly, ignorance prevails regarding the races of plant grown.

In Coimbatore it is said that turmeric is grown with yams, maize, castor, etc., the rhizomes being planted on ridges in June and July and dug up in March and April. As a rule, turmeric is not grown more than once in three years, and is followed by raggee and paddy. The cost of cultivation seems to be about $38 per acre and the yield from 3,000 to 5,000 pounds of prepared turmeric (value $39 to $65) and 6,250 pounds of yams (value about $65). The plant occupies the ground for nearly a year. When prepared as a condiment the root is called, in the vernacular (tamil), manjal, and when prepared as a dye it is saya manjal. Turmeric is often planted on land where sugar cane grew the preceding year, and is deemed an ameliorating crop.

Methods of Preparing the Rhizome.

Various systems of preparing the rhizome for the market are practiced. In Bengal they are cleaned, stripped of the fibrous roots, and heated gradually in earthen pots the mouths of which are carefully closed by lids. The rhizomes are thus stewed in their own juice. Afterwards they are dried in the sun for nearly a week, being protected at night from dew. In Madras the rhizomes are boiled in water and dried in the sun. In the Punjab the drying is done by artificial heat.

When intended to be used as a dye the rhizomes are boiled a second time and powdered while still wet, and a decoction is made of this paste with water. Formerly turmeric dye was very largely used in India at marriage ceremonies, but this practice has considerably declined of late. On ceremonial occasions it was also largely employed to rub on the skin and is so used to this day.

Use as a Dye and in Medicine and Chemistry.

The dye attaches itself readily to wool, silk or cotton, and mordants are rarely required. Calcutta dyers, however, obtain a brilliant yellow by mixing turmeric with carbonate of soda. The principal use of turmeric in India at the present day is as an auxiliary to such other dyes as al (Morinda citrifolia), safflower (Carthamus tinctorius) and lac (Tachardia), and in the production of shades of green along with indigo. It is still fairly largely employed in calico printing and in coloring native-made paper. In Bengal it is extensively employed in dyeing cotton cloths and toys and other articles of sola pith (Aeschynomene aspera). In the United Provinces it is said to be more commonly used as a condiment than as a dye, and is, as a rule, grown along with Colocasia antiquorum.

In Europe turmeric is still employed in dyeing compound shades of wool usually in conjunction with orchil (a purple lichen dye from Roccella tinctoria) and indigo extract. It is rarely used on silk. In medicine turmeric is employed as an aromatic stimulant, and in chemistry to make turmeric paper, the latter being used as a common test for alkalis, the chemical action of which turns the paper from a yellow color to brown or red. Turmeric is also said to be employed in the adulteration of mustard and to color varnishes. The parts to which turmeric is mostly shipped are Marseilles, Genoa, London, New York, and formerly Hamburg and Trieste. As a rule, turmeric is sold in Europe in powdered form.

HOW SUMAC IS GROWN IN SICILY FOR EXPORT.

Best Variety Grown in Soil of Volcanic Origin—The More Heat the More Tannin, the Valued Product.

There are two species of sumac grown in Sicily, the wild and the cultivated. The wild variety has a short stalk, small leaves attached two by two to a short stem, the leaves sparsely covered with a white fuzz on both sides, the stem with no small leaves near its base. The cultivated plant (Rhus coriaria) has a longer stem than the wild, its leaves are larger and are covered with fuzz only on the lower side, and the stem of the leaf has small leaves along its entire length.

Sumac requires a dry, loose soil. The best is a clay soil with lime and silica mixed. It does not grow well in damp, compact ground. The soil may be rich or poor, so long as it is dry. However, the best sumac is grown on soil of volcanic origin. This soil, together with much heat, produces the greatest amount of tannin. The heat is perhaps the most important element in the production of tannin. In Sicily sumac is grown at all elevations up to 2,000 feet.

Cultural Methods.

Sumac is planted in furrows 8 inches wide, 6 inches deep and 27 inches apart, the plants being placed 27 inches apart in the furrow. The sprouts should be taken from a full-grown plant and care exercised that the roots are entire. They must be a year old. The planting is usually done in December or January. The ground should be plowed twice about four to six months previous to the planting. The plants should be cut down to within 6 inches of the ground.

During the first year the ground should be spaded six times, immediately after the planting, in February, April, May, June and September. The first three spadings should be deep, the others only light. During the second year there should be three spadings, in January, March and May. In December little shoots that have appeared at the foot of the plant should be cut off. Sumac should be cultivated alone. The shade of trees retards development and reduces the amount of tannin.

Harvesting the Crop.

The gathering of the leaves takes place when they commence to turn yellow, usually in July and August. Some growers cut the twigs off near the stem and send them in this form to the threshing floor, where the leaves are separated from the stems by beating or by threshing with horses. However, this is not a desirable method, as it does not produce a good quality. The best method is to gather the crop in three periods. First the leaves near the stalk up to about the middle of the limb are gathered. Twenty or twenty-five days later half of the remaining leaves are gathered. A few days after this the ends of the twigs are cut off. This method gives two or three qualities of sumac, but as it requires a great deal of time and labor, the usual method is to cut off the whole plant near the ground. The twigs are piled on a floor and are turned three or four times a day with a fork.

After the leaves are separated from the wood they are taken to the mill, where they are packed in bales or ground for shipment. There is no treatment at the mill which affects the amount of tannin contained in the sumac.

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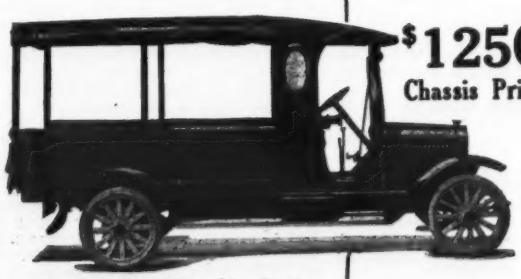

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CULTIVATION OF CLOVES AND COPRA IN ZANZIBAR AND PEMBA INCREASING

The cultivation of cloves on the archipelago of Zanzibar is a significant industry, in view of the fact that the islands of Zanzibar and Pemba produce fully 90 per cent. of the world's supply of this spice. In a report made by Perry C. Hays, United States Consul in the Sultemate of Zanzibar, it is said that in 1915 the exports of this product amounted to 25,365,424 pounds, with a value of $2,239,730. This is an exceptionally high return, and it came at a time when the purchasing power of the people was greatly in need of help. This gratifying showing for 1915 was not wholly due to heavy yields, for quantities that would have been shipped in the latter part of 1914 had been held over until 1915 because of the lack of adequate shipping facilities and the disturbed conditions then prevailing in the European markets for this crop. Of the quantity exported in 1915, 4,502,299 pounds went to the United States; 7,634,895 pounds to the United Kingdom; 1,592,766 to the Continent of Europe, and 11,525,302 to Bombay and Calcutta.

Copra also brings in considerable income to Zanzibar annually, both in the quantity locally produced and in that gathered from the mainland ports for trans-shipment to Europe. The quality of the Zanzibar cocoanut is of extraordinary grade when its meat is properly cured, but in the methods used for preparing it for the market there is a great loss, due to the imperfect drying in the sun or because of the damage done by the excess of smoke that comes in contact with it when it is dried in the heat of open fires. Sun drying is difficult because of the great number of rainy days prevailing in the achipelago, and curing by means of open fires is even more objectionable because of the volume of smoke that comes into contact with the meat of the nuts.

Trade with the United States.

Imports from the United States declined in value from $152,526 in 1914 to $92,744 in 1915. As cotton goods constitute a greater part of the imports from America, the decline may be accounted for by the withdrawal from Zanzibar of the local branch of an American house that had dealt largely in American cotton textiles and by the closing of the German firms that had dealt to some extent in these goods.

Among the articles imported from the United States in 1915 were:—Cotton sheetings, worth $36,232; sundry cotton goods, $10,214; clocks and watches, $189; crockery and glassware, $144; flour, $6,362; groceries, $1,159; hardware, $2,878; hosiery, $59; machinery, $2,086; petrol, $2,135; petroleum, $21,085; paint, oil and turpentine, $441; unenumerated provisions, $6,638; spirits, $292; tobacco, $135, and typewriters and sewing machines, $1,250. The range of articles purchased last year was considerably wider than that of 1914, as the Indian merchants are manifesting a greater interest in the general merchandise of America.

Direct representation on the part of American houses and the extension of suitable terms of payment would go far toward securing for the United States a considerable share of the trade of the archipelago.

Cloves in the quantity of 4,502,299 pounds, with a value of $401,398, were exported to the United States. This constituted the only item of significance consigned to America from Zanzibar. The consulate was moved from Zanzibar to Mombasa in March, 1915.

Manufacture of Kino in North Malabar.

Gum Rich in Tannic Acid and Is Used for Tanning—In Medicine It Is Employed as an Astringent.

Washington, September 29, 1916.

Inquiries have been received from American firms dealing in crude drugs requesting information as to whether certain botanical gums, seeds, and herbs used in pharmacy may be obtained from the Madras Presidency. Although South India is not at present an important export center for crude drugs other than nux vomica, senna leaves, and cinchona bark (this last named exported to Great Britain), there seems to be a possibility that trade in other botanical drugs may develop, as several varieties are produced in the region and are either not fully utilized for commercial purposes at present or else form part of a general stock sent to Northern ports for distribution.

The difficulty in the way of trade is said to be that gum is generally not systematically produced and hardly anywhere are the forests so exclusively of one gum-yielding tree as to admit of a large uniform and constant supply of any particular gum. Gum when detected is gathered casually by women and children or by the shepherds and sold in small quantities to the nearest shopkeeper. It is next conveyed to the dealers and so on through many hands until diversified gums, the produce of a wide area, get intermixed. This relates more particularly to the Indian "gum ghati" of commerce.

South Indian Gums and Resins.

Information obtained by the consulate would seem to indicate that among gums and herb extracts produced to some extent in South India are copal (the white dammar, or Malabar tallow, of South India); black dammar (C. strictum); euphorbia, one variety of which, not uncommon in South India, is known as the milk hedge or milk bush, and is a source of gutta percha as well as of medicine; gambogia (occasionaly found on the west coast and in the Nilgiris); mamiran, one of the twelve species of barberry plant, extracts from which are particularly used in medicine in applications to the eye; kino (Pterocarpus marsupium). Of these the trees producing white dammar, black dammar and kino are common in South India.

The production of Indian kino on a commercial scale and the introduction into the European market of an improved supply from India has been largely the result of the work of forestry officers of the local government. The manufacture of kino from the juice of P. marsupium, as conducted in the district of North Malabar, is thus described:—

Preparing the Gum—Shipping Centers.

The season for collecting is in the dry weather during February and March, when the trees are in blossom. The rigt to tap the trees is put up at auction. In other cases the tapping is conducted by rangers, under the supervision of the district forest officers. According to the approved method a longitudinal cut about 1½ feet long is made with an ax or knife through the bark of the tree, and side cuts are made to lead into this. A bamboo tube is then fixed at the bottom of the main incision to catch the juice. In about 24 hours the flow of gum ceases and the bamboo is taken down. When several of these bamboo tubes are nearly full they are carried to headquarters and emptied into a large caldron and the juice boiled. During the boiling the impurities which rise to the surface are skimmed off. When sufficiently concentrated the gum is exposed to the sun in shallow vessels until dry enough to crumble to pieces. It is then weighed and packed away in boxes.

Another method, more recently adopted in North Malabar, is to dry the juice in shallow trays in the shade. The trays are arranged on tiers or shelves constructed of bamboo and the dust excluded by muslin-covered doors. The gum is poured into the trays in layers about one-eighth of an inch thick and takes seven or eight days to dry, producing a dark ruby kino of great purity. The yield has been found to be about 1½ pounds of juice per tree, equivalent to three-fourths pounds of the dried gum, ready for medicinal purposes. The yield of dry kino from the liquid exudation depends on the consistency at the time of collection, but is usually 50 per cent.

In North Malabar alone it is stated that about 2,000 pounds of kino can be procured annually at a price of 3 to 4 annas ($0.06 to $0.08) a pound, but, generally speaking, there is scarcely any demand for the article except by the Medical Store Departments of Calcutta, Madras and Bombay. Malabar kino finds an outlet in the ports of Calicut and Tellicherry. The native State of Travancore exports its produce through Cochin and Alleppey, while gum collected in South Kanara is dispatched through Mangalore. Much of the kino is known as "Cochin grain," probably because Cochin is the principal port of call. Medicinally kino is used as an astringent.

Kino as a Dyeing and Tanning Substance.

Kino has been examined with a view to discovering its value as a tanning material, and some authorities consider that it would be suitable for use as such provided it could be obtained at a sufficiently low cost to enable it to compete with other tanning materials. Experiment seems to prove that the kino prepared by the method of merely drying the juice in the sun is best for use as a tan. The bark of the tree is occasionally used for dyeing, containing a brownish-red coloring matter which produces reddish-fawn colors with tasar silk.

After teak and blackwood, kino wood is said to be the most important in South India and to be in great demand for door and window frames, posts and beams, furniture, agricultural implements and cart and boat building. It has a high reputation in the manufacture of double-headed drums, being regarded as specially sonorous.

The butea gum tree, Bengal kino, or bastard teak, found throughout the plains of India proper and Burma, yields a gum sometimes used as a substitute for kino.

CALENDAR OF TRADE EVENTS.

American Association of Pharmaceutical Chemists.

1917 convention (date not fixed), at Atlantic City. President, B. L. Maltbie, Maltbie Chemical Company, Newark, N. J.; secretary, Dr. C. H. Searle, G. D. Searle & Co., Chicago, Ill.

American Pharmaceutical Association.

1917 convention, Indianapolis, Ind. President, Frederick A. Wulling, University of Minnesota; general secretary, W. B. Day, University of Illinois, College of Pharmacy, Chicago, Ill.; secretary of council, J. W. England, Philadelphia.

Flavoring Extract Manufacturers' Association.

1917 convention (date not fixed). President, Frank L. Beggs, Newark, Ohio; secretary, F. P. Beers, Earlville, N. Y.

Independent Oil Men's Association.

1916 convention, October 18, 19, 20, Hotel La Salle, Chicago, Ill. President, F. A. Van Tilburg, Van Tilburg Oil Company, Minneapolis, Minn.; secretary, E. E. Grant, 110 S. Dearborn street, Chicago, Ill.

Insecticide and Disinfectant Manufacturers' Association (Inc.).

1917 convention (date not fixed). President, Frank Hemingway, Hemingway & Co., Bound Brook, N. J.; secretary, Benjamin M. Kaye, 192 Broadway, New York city.

International Association Master House Painters and Decorators of the United States and Canada.

1917 convention, February 13, 14, 15 and 16, Hotel Taft, New Haven, Conn. President, William J. Albrecht, Toledo, Ohio; secretary, A. H. McGhan, Washington, D. C.

Interstate Cottonseed Crushers' Association.

1917 convention (date not fixed). President, George B. Covington, Hazlehurst, Miss.; secretary, Robert Gibson, Dallas, Texas.

Manufacturing Perfumers' Association of the United States.

1917 convention, April 10, 11 and 12 (place not fixed). President, A. M. Spiehler, Adolph Spiehler, Inc., Rochester, N. Y.; secretary, Walter Mueller, 309 Broadway, New York, N. Y.

National Association of Importers.

1917 convention, January 9, Downtown Association, New York, N. Y. President, Townsend Rushmore, Carlowitz & Co., New York, N. Y.; secretary, Morris D. Ferris, 165 Broadway, New York, N. Y.

National Association of Manufacturers of Medicinal Products.

1917 convention (date not fixed), Waldorf-Astoria, New York, N. Y. President, Charles J. Lynn, Eli, Lilly & Co., Indianapolis, Ind.; secretary, Chas. M. Woodruff, Parke, Davis & Co., Detroit, Mich.

National Association of Paint Jobbers.

1916 convention October 9-12, Hotel Traymore, Atlantic City, N. J. President, W. A. Alpers, Cleveland, Ohio; secretary, E. R. Drake, 212 West Washington street, Chicago, Ill.

National Association of Retail Druggists.

1917 convention (date not fixed). President, Robert J. Fricke, Louisville, Ky.; Secretary, Thomas H. Potts, 122 South Michigan Boulevard, Chicago, Ill.

National Fertilizer Association.

1917 convention (date not fixed). President, Horace Bowker, American Agricultural Chemical Company, New York city; secretary, W. G. Sadler, Nashville, Tenn.

National Paint, Oil and Varnish Association.

1916 convention, October 9-12, Hotel Traymore, Atlantic City, N. J. President, Frank Cheesman, Cheesman & Elliott, New York, N. Y.; secretary, George V. Horgan, 100 William street, New York, N. Y.

National Petroleum Association.

1917 convention (date not fixed). President, William Muir, Pennsylvania Paraffine Works, Titusville, Pa.; secretary, C. D. Chamberlin, Rose Building, Cleveland, Ohio.

National Varnish Manufacturers' Association.

1916 convention, October 17, Hotel Astor, New York, N. Y. President, J. B. Lord, Boston Varnish Company, Boston, Mass.; secretary, G. B. Heckel, The Bourse, Philadelphia, Pa.

National Wholesale Druggists' Association.

1916 convention, October 2-6, Emerson Hotel, Baltimore, Md. President, Charles Gibson, Albany, N. Y.; secretary, F. E. Holliday, 81 Fulton street, New York, N. Y.

National Window Glass Manufacturers' Association.

1917 convention (date not fixed). President, O. C. Teague, Utica Glass Company, Utica, O.; secretary, J. R. Johnston, 2106 First National Bank Building, Pittsburgh, Pa.

Paint Manufacturers' Association of the United States.

1916 convention, October 19-20, Belmont Hotel, New York, N. Y. President, R. H. Gibbs, T. H. Nevin Company, Pittsburgh, Pa.; secretary, G. B. Heckel, The Bourse, Philadelphia, Pa.

Proprietary Association.

1917 convention (date not fixed). President, Frank A. Blair, Foley & Co., Chicago; secretary, Charles P. Tyrrell, Syracuse Medicine Company, Syracuse, N. Y.

Western Oil Jobbers' Association.

1917 convention (date not fixed). President, A. H. Caward, Waterloo, Iowa; secretary, Harry Shaw, Webster Building, Chicago, Ill.

Western Petroleum Refiners' Association.

1916 convention (date and place not fixed). President, D. W. Moffet, Kansas Oil Refining Company, Coffeyville, Kans.; secretary, H. G. James, Finance Building, Kansas City, Mo.

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A NEW SOURCE OF FLOTATIVE AGENTS.

BY G. H. CLEVENGER, PALO ALTO, CAL.

The reagents now used in flotation consist of various acids or salts, which may be either electrolytes or non-electrolytes, dissolved in water and some substance or combination of substances which function as collecting or frothing agents. At times the only dissolved salts present are those naturally occurring in the water used. The general effect of the electrolyte is to greatly sharpen the separation between the gangue and the concentrate. Examples of this are: The use of sulphuric acid with zinc ores, and of sodium carbonate or calcium oxide (lime) with silver-gold ores. Crude pyroligneous acid is also sometimes used when available. Various oxidizing agents, such as permanganates, bichromates, etc., are added in the selective flotation of lead-zinc ores. Many other reagents for performing certain specific functions, either real or imaginary, have been proposed, and a number of them have been tried upon a working scale. The wild orgy of experimentation which is now going on in flotation exceeds even that which followed the introduction of the Washoe process for the treatment of Comstock ores, when, among other things, sage brush tea and tobacco juice were reagents added to the pans. Out of all this will, of course, eventually come a more or less standard practice for the treatment of each class of ore.

Omitting a discussion of the functions of frothing and collecting agents, the reagents used in flotation for this purpose may be classified under five general heads: (1) Essential oils; (2) fixed or fatty oils; (3) alcohols and their combinations with organic acids; (4) coal tar and its refined products; (5) petroleum and its refined products.

A flotative agent of some kind is required in flotation as now practiced. A single reagent, as, for example, certain of the essential oils, may perfrom the dual function of frothing and collecting agent, or a mixture of substances may be required.

In ths country, the essential oils used have been wood products, and have been almost exclusively confined to the steam-distilled pine oils. At the present time, the supply of these is limited, and the cost almost prohibitive, so that their use has been dispensed with as far as possible. The oils and tars resulting from the destructive distillation of the various species of the coniferae find a more general use on account of the greater supply and lower cost, although even these have risen in price and the future supply is somewhat problematical if the demand for them in flotation continues to increase at the same rate as in the past.

The fixed or fatty oils, with the exception of oleic acid and crude pyroligneous acid, are scarcely ever used, since they usually give poor results as compared with other flotative agents.

Coal tar is a common and cheap product, but not all coal tars are suitable for use in flotation. Furthermore, the marketing of coal tar is coming more and more into the hands of large distributors, who contract for the output of the various gas plants. The refined products of coal tar are useful flotative agents, but in the case of certain of these, for example, carbolic and cresol, the price at present has become prohibitive. In general, crude coal tar yields the best results when mixed with other oils. It is a frequent practice to use a small proportion of pine oil, in order to modify the froth. Fortunately, in many cases these cheaper mixtures yield very satisfactory results, and can now be obtained at a reasonable cost.

It appears that only the crude petroleum oils having an asphaltic base are generally useful in flotation. These are invariably mixed with other oils. The refined products of petroleum are usually not satisfactory, except as constituents of oil mixtures. The one exception to this is perhaps the case of kerosene acid sludge, which is a by-product of petroleum refining. Kerosene acid sludge from Eastern refineries gave unsatisfactory results at Anaconda, but California kerosene acid sludge, resulting from the refining of crude oils having an asphaltic base, is satisfactorily used in conjunction with a small proportion of wood creosote for the treatment of Anaconda copper ores. While California kerosene acid sludge is a satisfactory flotative agent with many ores, the available supply tends to limit its use. Formerly California refiners threw it away, but now little of it is available upon the open market, since practically the whole of the present production is contracted for a long time in advance by pioneer users.

A suitable oil supply, both as regards the character of oil to give the best results and its present and future availability, is a matter of serious consequence to companies operating flotation plants. It was with this in mind that I began the investigation of possible sources of flotative agents, with the particular object of affording relief to mines located in the arid regions of the West, where none of the common flotative agents are locally available, and where transportation costs upon those from the outside are high.

Certain plants and shrubs have the peculiar property of secreting oil in the new growth, during the growing season, and particularly in the leaves. Botanists appear to be uncertain regarding the function of this oil in the metabolism of the plant. Some hold that it is a reserve food supply for the plant, while others believe that it is waste product which the plant fails to throw off. Be this as it may, many plants, shrubs and trees contain oil in the leaves and new growth. A good example of this is the case of the eucalyptus tree, from the leaves of which essential oils, which are used for various purposes, are recovered by steam distillation. The leaves of the variety known as amygdalina, unique as being the tallest tree in the world, have afforded a large proportion of the flotative agent used in the concentration of complex Australian ores. This variety of tree is fortunately very plentiful in close proximity to these ore deposits.

In the great arid and semi-arid mining regions of the West the most common of the few plants and shrubs native to the region are the varieties of sage brush known as mountain sage, pasture sage, wormwood sage, etc.; also, in certain regions, greasewood and other shrubs of a similar nature. It is therefore to sagebrush that my attenton has been directed in the search for flotative agents for concentrating Western ores.

It appears that the various varieties of wild sage were first investigated by certain members of the Department of Agriculure, with regard to the possibility of producing from them by steam distillation essential oils suitable for pharmaceutical use. Steam-distilled oil was prepared by Rabak from the variety artemisia frigida in 1905, and during the summers of 1907 and 1908 larger quantities of oil were prepared from specimens of this plant, collected in South Dakota. In 1912, an essential oil prepared by the steam distillation of Ramona stachyoides (black sage) from Southern California was also reported by Rabak. This oil was said to contain 40 per cent. of camphor. In 1914, Charles E. Burke and Charles C. Scalione gave an account of an investigation of an essential oil which had been prepared from the same shrub by the steam distillation of several hundred pounds of leaves and twigs collected from brush growing near Riverside, Cal. The yield was of oil in this case was 0.9 per cent. of the weight of the material used. The yield was somewhat higher than that reported by the Department of Agriculture. This is perhaps accounted for by the fact that the brush was collected later in the season. This oil is reported as having the following composition:—

	Per Cent.
Pinen	6
Cineol	30
Dipentine, terpinene, etc.	25
Thujone	8
Camphor	25
Resinous material	5

Camphor was separated from a portion of the oil, thus demonstrating the rather interesting possibility of black sage as a source of borneol camphor. Upon request, Mr. Scalione furnished me with a small sample of the original oil. This oil is clear, with a very slight yellowish tinge, and has an agreeable odor. In fact, so far as appearance and general behavior goes, although the chemical composition is somewhat different, it very much resembles steam-distilled eucalyptus oil from the Australian variety, amygdalina. This oil is a good frothing agent, and it yielded quite satisfactory results upon lead and zinc ores in a qualitative way, although the amount available did not permit of thorough investigation. The idea of investigating sage brush and greasewood as possible sources of flotative agents was conceived early in January, but it was not until early in March that the first 100 pounds of sage brush was forwarded to me, through the courtesy of G. B. Lantz. This lot was collected near Goldfield, Nev., and proved to be the variety Artemisia tridentata. "In the Western Arid Transition zone the flora consists largely of the true sage brush, Artemisia tridentata," therefore this would be the variety available in the greatest abundance near to the mines of this region.

An apparatus for destructive distillation, capable of treating 30 pounds of brush at a charge, was constructed, and two charges of the brush were distilled. The products which first came ober consisted of acid liquor resembling the crude pyroligneous acid obtained from wood distillation, a black oil or tar, and inflammable gas. Finally these products ceased to cove over, but, upon raising the temperature, a considerable amount of gas was given off and a rather thick reddish-brown liquor, having an alkaline reaction, began to come over, and with it was a small amount of tar similar to that which came over with the acid liquor. The brown liquor had the characteristic fishy odor peculiar to the amines. There was also at times a distinct ammoniacal odor. The acid and alkaline liquors were kept separate, while the tar from both was combined. These three products were first tried qualitatively in the flotation of finely ground samples of various minerals such as gelena, cinnabar, pyrite, etc.

The acid liquor behaved very much as does ordinary pyroligneous acid. The alkaline liquor was a good frothing agent, but the froth carried up little mineral. The tar which came over with the acid liquor proved to be a splendid flotative agent.

Following this, quantitative tests were made upon a number of different ores, employing the tar produced from this lot of sage as a flotative agent. These results, a number of which are given below, were in general very satisfactory.

A sample of zinc ore from the Butte Superior mine, Butte, Mont., containing 22.39 per cent. of zinc, when tested in a Janney laboratory machine employing a solution of 0.25 per cent. of sulphuric acid, gave 97.0 per cent. extraction of the zinc. The first concentrate contained 53.8 per cent. of zinc, the second 45.9 per cent., the third 40.5 per cent., and the fourth 18.1 per cent. The oil consumption was at the rate of 0.4 pound per ton of ore.

A sample of mercury ore from the New Almaden mine, California, containing 0.26 per cent. of mercury, when tested in a Janney machine employing a 0.2 per cent. solution of sodium carbonate, gave an extraction of 90 per cent. of the mercury. The first concentrate contained 3.6 per cent. of mercury, the second 2.5 per cent., the third 1.55 per cent., and the fourth 0.95 per cent. The oil consumption was at the rate of 1 pound per ton of ore.

A sample of lead ore from the Coeur d'Alene region, containing 12 per cent. of lead, when tested in a Janney machine employing a 0.05 per cent. solution of sodium carbonate, gave an extraction of 92.2 per cent. of the lead. The calculated lead content of the total concentrate was 37.3 per cent. The oil consumption was at the rate of 0.67 pound per ton of ore.

A sample of silver-gold ore from the Ophir mine, Virginia City, Nev., assaying 0.46 ounces gold and 7.4 ounces silver per ton, when tested in a Janney machine employing a 0.1 per cent. lime or sodium carbonate solution, gave an extraction of approximately 90 per cent. of the silver and 95 per cent. of the gold. The first concentrate assayed gold 5.3 ounces and silver 198 cunces per ton; the second, gold 3.75 ounces and silver 72.9 ounces per ton; and the third, gold 1.32 ounces and silver 35.3 ounces per ton. The oil consumption was at the rate of approximately 0.6 pounds per ton.

The oil consumption when employing sage tar appears to be less than with most of the other oils experimented with in treating the same ores, and the extraction was in general better. Since it is the experience of many that large-scale operation requires less oil than is indicated by small-scale tests, it is reasonable to suppose that the oil consumption in treating the ores cited would be materially lessened when working upon an operating scale, and that possibly the extraction could be bettered. I think the latter is particularly true of the Ophir ore.

Later in March, another lot of brush of the same variety was collected by Mr. Lantz from the same locality, more fully in leaf than that collected earlier in the season. Distillations were run on this lot, keeping the various products separate, so that they could be properly measured and weighed.

Temperature measurements were made at regular intervals by means of a thermocouple, and as a result there was better control of the heating than in former tests. The yie'd from the last of these tests, which was the most carefully conducted, and was therefore the most representative, was as follows:—

	Pounds.	Per Cent.
Weight of sage brush used	3.0	....
Acid liquor	8.4	28.00
Tar with acid liquor	1.1	3.66
Alkaline liquor	0.66	2.20
Tar with alkaline liquor	0.09	0.30
Charcoal	10.00	33.33
Gas (by differences)	9.7	32.51

The retort was slowly heated for one hour before liquid began to condense. The temperature at the center of the charge at the end of this time, as indicated by the thermocouple, was 60 degrees C.; the temperature at the sides of the charge was probably somewhat higher.

In the next period of six hours, during which the acid liquor and most of the tar came over, the temperature rose from 60 degrees to 275 degrees C., the rise above 100 C. taking place during the last hour and a half.

The alkaline liquor and the last of the tar came over in the last period of 3 hr., during which the temperature rose from 275 to 611 degrees C.

It is reasonable to assume that a yield of about 4 per cent. of the tar oil can be realized if the sage is collected at the proper season and the distillation carried on by the best methods. Then there is the acid liquor, which in certain cases could be used directly in flotation; or it might prove profitable to recover the alcohol, acetic acid, the dissolved tar oil, etc., which it contains. I have not had an opportunity to investigate the alkaline liquor thoroughly, but it would seem to present many interesting possibilities. Among other things, the first lot was found to contain 2.09 per cent., and the second lot 2.18 per cent. of nitrogen. I suspect that this liquor may also contain phenolic bodies which would be useful in flotation when separated from the other constituents. The charcoal is fine, but it should be possible to utilize it for fuel in heating the retorts. One peculiarity is the high percentage of ash which it contains (10.5 per cent. in the one sample analyzed). This may be in part due to dust upon the sage brush, although the brush was chopped fine before distillation, and it would seem that a good deal of the dust would be shaken from it during this operation. If the charcoal were burned, as previously suggested, the alkaline ash might serve instead of lime or sodium carbonate in cases where flotation in alkaline solution was practiced.

The inflammable gas would, of course, be burned under the retorts. The proportion of the heat necessary for carrying on the operation which could be realized in this way is problematical; however, it is reasonable to assume that a considerable part of that required for destructive distillation coud be produced by burning the gas and charcoal. Moreover, another interesting possibility in connection with the heating of the retorts is the utilization of the waste heat from the various metallurgical operations.

Through the courtesy of Charles Scallone, several ounces of steam-distilled essential oil was prepared from the tip ends of a portion of the last lot of sage brush. Approximately one hour was required for distilling each charge of twenty pounds. The yield amounted to 0.43 per cent. of the whole plant. This oil had a greenish-yellow color when first distilled, but became yellow upon standing. It has the characteristic penetrating odor of sage, and a very decided tendency to creep up the sides of the glass-containing vessel. This oil appears to have distinctly different properties from the essential oil resulting from the steam distillation of the black sage. It gives promising results with some ores, but in my opinion it is not nearly so good as the tar oil resulting from the destructive distillation of the same shrub. In fact, under ordinary circumstances, I do not think that the steam-distilled oil can be given serious consideration, since the mines that would be most benefited are generally located where fuel is high, and the yield of oil is rather small, probably less than 1 per cent. In addition, there are no other valuable products, unless the tannin extract resulting during steam distillation should have a market value or a demand should arise for "sage tea."

Time has not been available for making analyses and a study of all the products resulting from the destructive distillation of sage. However, sufficient work has been done to show at least that the light tar is an efficient flotative agent for a considerable number of ores, as indicated by the tests cited.

The idea of utilizing sage brush in metallurgy is by no means new, as is shown by the following quotation, referring to early development of the Washoe process, and the wild riot of experimentation accompanying it:

"The native sage brush, which everywhere covered the hills, being the bitterest, most unsavory and nauseating shrub to be found in any part of the world, it was not long before a genius in charge of a mill conceived the idea of making a tea of this and putting it into his pans. Soon, the wonders performed by the sage-brush process, as it was called, were being heralded through the land."

Loaded Shrapnel Shell Found in Coal Bunker in Beckers' Dye Plant.

A loaded shrapnel shell, weighing more than 30 pounds, was found on Thursday in the coal stored in a large bunker at the plant of the W. Becker's Aniline and Chemical Works, at East Eighty-third street and Ditmas avenue, Brooklyn, N. Y. According to Chief Hammitt, of the Bureau of Combustibles of the New York Fire Department, the shell was discovered imbedded in the coal supply of the chemical works by an engineer. The shell was removed from the plant by John F. Dixon, head of the Brooklyn branch of the bureau. How the shell found its way into the coal bunker remains a mystery The theory that it might have been one of the shells which dropped in a coal barge or coal car at the Black Tom explosion is a plausible one, according to Mr. Hammitt.

Natives of Persia Use Manna in Making Sweetmeats.

Manna, or gaz, used in American pharmacy, is a white glutinous substance popularly identified with the manna of the Scriptures, which is found upon the branches and leaves of trees, particularly of the tamarisk, where it is said to be deposited by a small, pale green insect. The natives scrape it off the leaves and make it sometimes into a paste, but more often into a sweetmeat called gezungebin, which, although cloying to the palate, is agreeable to the taste, resembling a superior and less sticky form of nougat.

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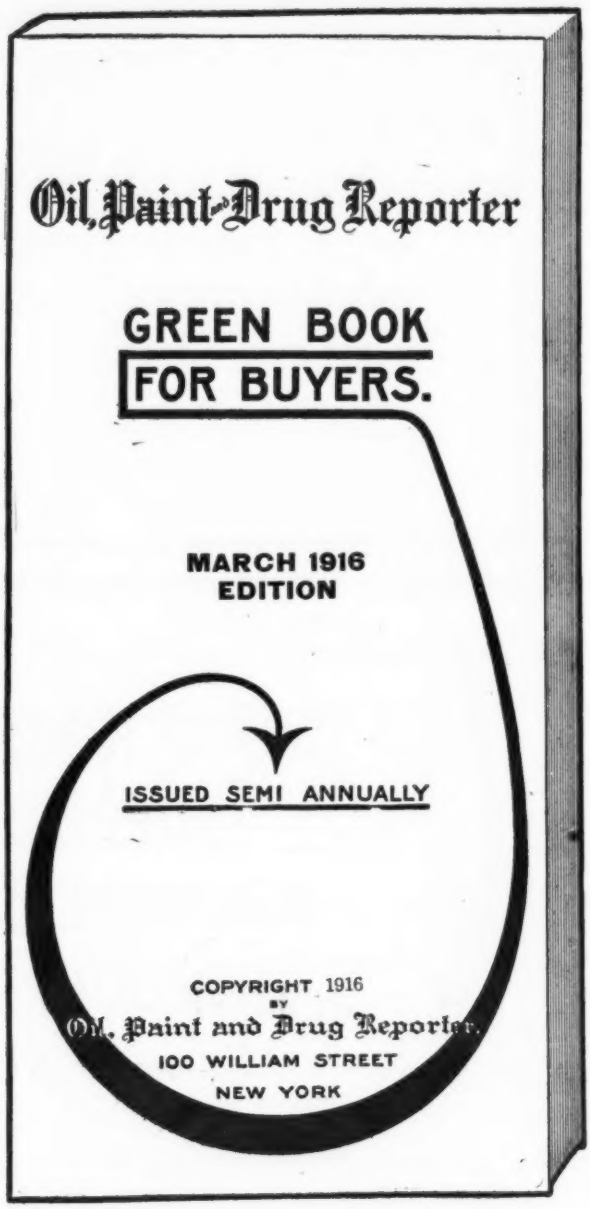

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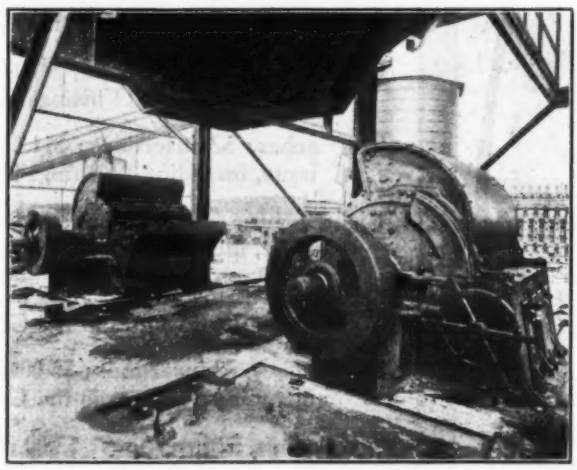

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PETROLEUM.

Wyoming.

(Continued from page 44.)

thirty-two cars of material to be shipped to its supply store at Basin, indicating that there is a heavy demand for oil well supplies.

The pipe line from the Elk Basin field to Frannie is too small to care for the production of the field, as the production is growing at the rate of several hundred barrels a day. The same condition prevails at the Grass Creek field, as the line from that point to Chatham is not large enough to handle the production, which is increasing rapidly.

A. M. Barringer and associates are down near where the pay sand should be found in a wildcat well about four miles southeast of Cody, in Park county. This concern has a franchise to supply Cody with natural gas and expects to drill in a big gas well within a few days. The product will then be piped to Cody. The same company is reported nearing the depth to find gas sand in another well in the same vicinity.

The Cretaceous Oil Company is down several hundred feet with its test on a big block of lease on Big Piney. About fifteen miles south of Cody the Flathead Valley B. C. Oil and Gas Company is down about 500 feet with its test well.

An oil drilling machine has been shipped to Wyoming by Eastern operators and is being taken to the Beaver Basin field, near the Cross ranch, in Converse county. The company to drill the well has purchased some land in the new field.

The Liberty Oil and Gas Company of Seattle, which is sinking a well on its property about four miles up the Greybull River from Greybull, is making good progress, as the hole is down close to 800 feet.

The lands withdrawn from entry in the Big Muddy fields in Converse county, includes large areas in township 33 north, range 76; township 32 north, range 77; township 33 north, range 77; and township 32 north, range 78. Oil men in that vicinity manifest more or less discouragement in that the order will retard contemplated development to a great extent and affect, materially, that already in progress.

The French Oil Company, capitalized at $300,000, has been incorporated with headquarters at Casper, by James H. Miller, L. J. A. Philpot, A. C. Campbell, H. Leslie Parker, Wm. R. Johnson, Wm. O. Wilson and George C. Brooks. The Eagle Petroleum Company of Basin has been incorporated with a capital of $40,000 by H. P. Rothwell, M. McGrath and E. T. Williams.

Twenty or more strings of tools are working in the Grass Creek field. Ben Drayton is running seven strings for the Ohio Oil Company in that field and an average of a good well a week is drilling in by him. Mitchell and associates are starting two new wells in the same field, and the Levi Oil Company is starting two additional wells.

Crall & Hyde, drilling on the Rogers ranch about two miles north of Basin, have been delayed by a fishing job for several days, having lost the tools in the hole. The Midwest Oil Company in the Little Buffalo basin field is reported at a depth of 1,700 feet with a collapsed 10-inch casing and is having no end of trouble. The Great Western Oil Company's well on the Coffield tract near Basin, is showing for 30 barrels a day. Scott Mills is making good progress in the drilling of his well on the Peaze tract east of Basin, and with no bad luck should be able to bring the well in within a week or so.

Corbin & Lewis have secured an injunction restraining A. W. Brown from proceeding further with his drilling operations north of the river from the Elkhorn well in the Big Muddy field. The case will be heard at Douglas, the county seat of Converse county. Elmer Green is moving his rig across the river on the Elkhorn Company's lease in the Big Muddy field and will start spudding within a few days.

There has arrived in Casper the first shipment of oil produced from the new Big Muddy field. Two cars of crude were loaded from the Merritt Oil and Gas Company's wells and were taken to the Midwest refinery for refining purposes. This initial shipment marks a milestone in the development of the oil fields of Central Wyoming and it is a certainty that many more cars will follow until the time comes when a pipe line will be laid.

In addition to the withdrawal from entry of about 140,000 acres of lands in the Big Muddy field, announced a day or so ago, the general land office has withdrawn from entry all unappropriated land in the Lost Soldier field north of Rawlins. The Lost Soldier withdrawal covers townships 24, 25 and 26 in ranges 88, 89 and 90 and totals in area 325 square miles.

Simcox and Kistler, both stockholders in the Texas Oil Company, have been in Wyoming. One of the largest deals that has been transacted in the Big Muddy field since the sale of the Elkhorn Oil Company's part holdings was culminated between these gentlemen and Roscoe Crary when the Texas Company leased 1,000 acres of the Horne ranch in the Big Muddy field.

Proceedings in bankruptcy which were instituted against the International Consolidated Oil Company, a concern with headquarters at Evanston, Wyo., were dismissed in the United States Court.

The big gas flow recently brought in in the Little Buffalo Basin field by Guy Craig has finally been gotten under control after an immense amount of gas went to waste.

The Central Wyoming and Refining Company has been chartered with a capital of $250,000 to develop holdings in Carbon county, with Baggs as headquarters, by W. W. Wilson, L. P. Maupin and R. R. Maupin. The Greybull Oil Company is a new concern that has recently been organized to prospect ground on the south side of the Greybull River, about two miles from Greybull. The company has 102 acres on which it will drill several wells. The company has a capital of $50,000 and is making headquarters for the present at Denver, Col. The Arminto Oil Company, with a capital of $50,000, has been incorporated by D. H. Ralston, J. L. Marquis, D. C. McClellan, T. A. Hall and Patrick Hett, all of Arminto. The company will develop oil holdings in Natrona county.

Over 12,000 acres of land were filed upon at the Lander land office during the past few days as oil land for locators, principally in the southern part of Fremont county. Chester Brannan, G. P. Payne and associates located 39 quarter sections of land in 27-95, which is in the extreme southern part of the county at the head of Alkali Creek, west of Crook's Gap. C. P. Sheahan and associates filed 25 claims in 27-92, which is in what is known as the Crook's Gap field. C. P. Park and others made 26 locations in 5 north 1 west, located well up on the ceded portion of the reservation.

California capitalists have secured a foothold near Newcastle, in Weston county, and secured a lease on the Oil Creek ranch six miles southwest of Newcastle, and will start as soon as material can be shipped to the field.

Never before in the history of petroleum in Converse county has there been sa much interest displayed in oil circles in the county. In the Brenning Basin and in the Cheyenne River district, drilling is in progress and work will shortly start on the Beaver Creek Dome, just over the divide from the Brenning Basin. The success that has come to the operators in the Big Muddy field in the western part of the county has acted as a spur to operations in every district of that section of the State where the formations justify the work. One of the finest drilling outfits that ever came into Wyoming arrived a few days ago. It is the property of the Midland Oil Company of Parkersburg, W. Va., and is complete in every detail, with material capable of going 6,000 feet deep if required. This company will begin operation on the Beaver Creek Dome on the Upper La Prele, just over the divide from Brenning basin. The heavy string of tools was brought to the field through the efforts of W. P. Spaugh and the company is composed of men of ample means to give the territory a thorough tryout. The geological report upon that section justifies the expenditure. Two more cars of material for that district are expected to arrive at most any time. In Brenning Basin the Douglas-Wyoming Oil Company and the Wyatt-Albertson Oil Company are now drilling. There are already producing wells in the district, all of which are shallow. It is the conviction of those interested there that the same results that have attended the work in the Big Muddy field will follow the deep drilling in Brenning Basin.

Baron Eberhard von Pawel, of Laramie, has returned from Rawlins where he has been looking over his oil interests. He has secured a drilling outfit and will begin work sinking a hole on his holdings near Rawlins immediately. He has 1,500 acres of land right on top of the Mahoney Dome, and declared that there are oil wells on either side of him, about half a mile away. He was offered a large sum for his holdings, but preferred, he said, to risk finding oil himself, as he likes the game. A well was recently drilled in on the same dome that made a good showing of oil.

Representatives of some of the large oil interests are securing leases on farm and ranch lands about ten miles southeast of Chugwater and thirty miles north of Cheyenne.

N. S. Wilson, general superintendent of the Midwest Refining Company, and Dr. W. G. Burnett, an oil field expert, have completed an inspection of the holdings of the Pilot Dome Oil Company in the Pilot Dome field northwest of Riverton in Fremont county and are more than satisfied that the field will prove a very productive one.

Northwestern Louisiana.

Shreveport, La., Sept. 26, 1916.

A steady falling off in production and failure to get new producing wells in the established pools of Northwestern Louisiana has inevitably resulted in a dearth of activity in these sections and an increased effort to locate new pools. Wildcatting has spread over the entire northern half of the State and across the State line into Mississippi, as well as north and west of the Texas and Arkansas borders. Showings of oil and gas have been found in a number of these districts, sufficient to encourage further development, notably at Bethany, Logansport and Monroe, but there have been no sensational completions since the opening up of the Crichton field in Red River Parish.

An improvement was shown in the amount of production from the field the last week, the daily average being 600 barrels more than that of the week previous. The total amount produced in all districts averaged 28,550 barrels daily, of which 12,970 barrels were produced in De Soto and Red River, and 15,580 barrels in Caddo and Northeastern Texas. The Producers' Oil Company's well, completed on the Hicks lease last week, half way between the Naborton and Crichton fields, increased to more than half its original capacity and is making about 1,700 barrels daily. Fire in the De Moss well, which came in a 10,000,000-foot gasser, on the same day and in the same territory, has been extinguished, and preparations are being made to drill deeper for oil. There is undoubtedly a large pool of oil in this vicinity, as a big well was completed here more than two years ago, but was closed in on account of litigation

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over the property and finally went to salt water.

There were five producing wells completed during the past week all of them in the old Caddo field, and having an aggregate initial production of 1,630 barrels. The best well was Ferry Lake 56, of the Gulf Refining Company, which came in with an initial production estimated at 2,500 barrels and settled down to 1,500 barrels daily. Locations have been made for seven more wells on this lease, one of which has started drilling. Four producing wells were completed by the Producers' Oil Company, two in the shallow sand territory between Vivian and Hoaston, Allen B-9 making 65 barrels and Baily 28 making 35 barrels. In the Monterey district Boyter Fee 4, section 3-21-16, made 25 barrels. The Arkansas Natural Gas Company's well on the Newberry lease in section 31-20-16, south of Ferry Lake, which came in early in the month a 20-barrel pumper, increased to 50 barrels daily, and the Louisiana Oil Refining Company is drilling deeper in the Lewis well in the same district and expects to get a good well.

The Producers' Oil Company's deep test on the Harrell lease in the Montorey district is down nearly 3,500 feet and drilling ahead. Lee Kinnebrew et al. have taken over part of the holdings of the Amateur Oil Company and is arranging to pump Noel 1 in section 34-20-16. The Southern Oil Company has a second well ready to pump on the Foster-Webb-Vestal lease in section 34-20-16, and White Bros. are down 1,000 feet in Cushman 1, five miles south of Ferry Lake and west of Mooringsport.

East of Lewis Whitney & Elwell are arranging to make a test in the deep well drilling on the Gallagher lease in what has always been considered shallow territory and in which they are now down 2,600 feet. The Caddo Gas and Oil Association is drilling Gallagher 1 in this vicinity, and further east Thos. Ward is making a test in the chalk rock in Craig 2, section 15-21-15.

Oil in Bossier.

Considerable excitement prevails today over the report of a showing of oil in the Gulf Refining Company's well on the Hodges lease, in the Elm Grove district, Bossier parish. The oil found is in the chalk rock and not believed to be of any great quantity, but it is enough to know that the oil is there, after repeated failures to get any showing in this territory. The well is situated just east of the L. R. & N. Ry., 12 miles southeast of Shreveport and three miles southeast of Taylortown, and is just north of the gas well recently completed by Hodges & Caplis. Other wells are now in being drilled in this vicinity, and the Hodges well will undoubtedly encourage further development. J. P. Flournoy's Carmouth 1, section 16-17-12, proved a dry hole at 2,600 feet; the Gulf has two other wells drilling near the Hodges, and a few miles further north White Bros. are drilling on the Giddens and R. R. Lands Company leases.

Very few rigs are left running in the old De Soto field, the most interesting development in this parish being in the Logansport district, where good showings of oil in several wells have led to considerable activity. The Logansport Oil Company is having trouble over some leases and work on the wells has been abandoned for the present, excepting the Stephens well, which has been taken over by the Phoenix Oil Company and has started drilling. T. A. Snell et al. and Lee Wilson et al. are drilling in this territory, and the Producers' Oil Company has made a new location two miles south of Logansport and eight miles east. In the east end of De Soto parish, just across the State line from the Hicks well in Red River, the Gulf Refining Company is drilling on the Fortson lease in section 4-12-11.

The old Crichton field, in Red River parish, has been practically abandoned and operations in this parish are confined almost entirely to tests in outlying districts. Two miles southeast of the Hicks well the Gulf Refining Company is drilling on the Jenkins lease in section 11-12-11, and north of the Crichton field the Gulf Refining Company and O. Kinney, et al. have wells drilling on the Weiss and Westdale leases. In the Black Lake district, south of the Crichton field, Hathaway et al. are drilling Carnes No. 1, all other wells being temporarily closed down in this district. In Natchitoches parish the Arkansas Natural Gas Company has abandoned Glauque No. 1, section 24-11-6, at 2,500 feet.

In the vicinity of Keithville, La., south of Shreveport, the Producers' Oil Company drilled over 3,000 feet in Slattery 1, and getting no showing, are pulling casing to abandon. Nine miles west of the Slattery well Dickinson & Woodley are drilling Alfred No. 1 in section 22-16-16.

South of the Bossier field in Bienville parish a location has been made for Shehee No. 1 in section 11-16-10, and further south, in Winn parish, the Pardee Oil Company is drilling Gee No. 1 in section 30-11-2. In Morehouse parish the Progressive Oil and Gas Company is rigging up to drill Fisher No. 1 in section 33-21-5, and in Avoyelles parish the Black River Oil Company is drilling Cole No. 1 in section 30-4-4. Across the State line in Mississippi the Mississippi Oil and Gas Company is drilling Ferguson No. 1 in section 31-16-14.

One of the biggest gas wells drilled in the Louisiana field recently got away from the drillers last week and is running wild at the rate of 50,000,000 cubic feet a day. The well is situated two miles southwest of Cedar Grove, a suburb of Shreveport, and was drilled by the Southwestern Gas and Electric Company. Every effort is being made to get the well under control, and representatives of all the big oil companies located at Shreveport are lending their aid and the benefit of their experience.

Summary for the Week.

Following is a summary of drilling operations in all the districts of Northwestern Louisiana for the week ending September 23, 1916:—

Districts.	Comp.	Prod.	Dry.	Gas.
Caddo	5	1,630	..	..
Northeastern Tex.	..	..	..	..
Bossier	1	..	1	..
De Soto	..	..	..	..
Red River	..	..	..	..
Wildcats	2	..	2	..

Eastern Petroleum Review.

Pittsburgh, Pa., Sept. 29, 1916.

A review of the high grade petroleum fields east of the Mississippi River comprising Southern New York, Pennsylvania, West Virginia, Southeastern, Central and Northwestern Ohio, Indiana, Illinois, Kentucky and Tennessee fields, for the week shows a slight decrease in operations and production, but that is no more than can be expected at this season of the year, when operators are busy getting their old pumping wells into shape to withstand a hard winter. The average oil man has no complaints to make for the season's work, as they are well satisfied that they have done the best they can and, while the prices declined, the conditions are much better for it. Should the price remain at its highest figure during the entire season, it is figured that 1917 would have been a very dull year in petroleum, while now the prospects are for better prices with the advent of spring. Many not familiar with the gigantic industry believe this, but nevertheless it's a fact. There is a great demand for refined products as well as fuel oil, and during the cold season the wells do not prove as prolific as during the cold weather and it is natural that the daily average production will decline at least from ten to twenty per cent., for there will be less drilling done to keep up the average of the big gushers that are dwindling from day to day. The decrease in price was the best thing that could happen to the old business.

There is still a cry going the rounds that there is no increase in production in the Oklahoma-Kansas fields. Usually the average man takes the pipe-line of runs as the basis of production in that field, and while they are equally as much as they have been for a long time, they do not figure that the pipe lines are taking only a portion of the oil from the wells. Were all the wells allowed to produce their oil and the oil get handled by the pipe lines the story would be a vastly different one. Many wells are only drilled to the sand in the Shamrock and Cushing districts of Oklahoma and the Augusta and El Dorado fields in Kansas, and they will hardly be drilled in until the pipe lines are able to handle the output. If they were all drilled in within thirty days they would swamp the pipe lines, as the capacity of the lines is not great enough to handle the product. All the declines from month to month for several months back are due to the fact that runs of the pipe lines have been cut and the fact that the Prairie Pipe Line Company announced that it would make an effort to take care of the product, caused the drilling in of a number of gushers that were only drilled to the sand months ago, and had they not stopped this work, the price would be lower than it is now. The estimated production of the mid-continent fields at the close of the past week were as follows:—Caddo, 27,920 barrels; Electra, 24,000 barrels; Corsicana light and Thrall, 1,800 barrels; Kansas, 25,000 barrels; Cushing and Shamrock, 120,000 barrels; Healdton, 40,000 barrels. Total, 345,720 barrels. The estimated production of heavy gravity oil in the Gulf Coast field was 54,985 barrels; Corsicana heavy, 480 barrels.

While crude oil is reported declining and refineries greatly increasing in number, the temptation to forget where the refineries' products are going will be all the stronger when the refiner is pushing his sales rather than waiting for buyers to come to him. Here is when "irresponsibles" are most likely to get into the oil business. If good salesmanship is used by all oil refiners—good salesmanship includes good credit work—and by even the smallest of the new refiners, the oil trade need have little fear about the rapid declines in the several markets; but, if poor business and sales judgment is used by just one or two refiners, even though comparatively small, they are going to start a period of price cutting, not only among the refiners, but particularly among the jobbers. How far the decline will go there will be no telling, save that it will go far enough to eliminate those "irresponsibles" from business. This has been true in the past scores of times, but as in many other things, humanity is not prone to learn from the past. There is a duty devolving on the refiner to see he sells his products to a responsible marketer of petroleum, one who will so sell those products that he will not injure the trade, just as there is a duty upon the marketer to see he sells his products that he does not injure himself, his neighbor, or the refiner. If the oil trade as a whole does not recognize that duty now it is going to cost all a great deal of money.

Around the Many Fields.

There is, unquestionably, a better feeling among oil men since the clipping of prices has been discontinued. A reaction toward higher prices is hoped for, early in the spring, if not during the winter's season, when production is at its smallest.

Another strike that looks good has been made in the Northern Louisiana field, and it may be the opening of another productive area of territory not heretofore touched by the drill. This well is located a couple or more miles to the southwest of Gusher Bend. The well first showed a heavy gas pressure and before the well could be shut in to conserve the gas the well blowed itself in and started flowing oil at the rate of 700 barrels a day. Two gas wells have been drilled near Gusher Bend, and one of them caught fire and is burning. Much leasing has been done there since the oil well was drilled and fancy bonus prices prevail for territory close up to the well.

There is considerable excitement a short distance southeast of Santa Anna, in Coleman county, Texas, over the showing of oil in a wildcat well. The belief is that it will make a profitable producer and much leasing is being done. The well on the Luke Wilson Ranch, in Archer county, continues to show oil and gas, but a bad fishing job delays the bringing in of the well.

The Galliard well in the Gulf Coast field of Texas and in the Goose Creek district, that caused so much excitement some time ago has ceased flowing and the owners have been unable to bring back any production from the well. This indicates a heavy salt water back of what oil there was in the hole. It looks as though the deep sands in that field is or will cause no end of trouble with water. Several days ago a 400-barrel deep sand gusher was brought in.

Many of the natural gas lines throughout the country are having considerable trouble with electrolysis caused from the electric lines over the country. West Virginia and Ohio gas companies are having their share of trouble, especially when there are electric car lines running near where the gas lines run.

In the Healdton district, in Oklahoma, a 40,000,000 cubic foot gas well throws stones. The pieces of rock are fired from the depths with great force and some of them are as large as a man's fist. In view of the fact that gas conservation is very necessary in Oklahoma, the conduct of this well in driving away intruders with forcibly ejected stones puts the gasser in the class of lawbreakers as well as headbreakers, and in official and non-official circles the gasser is viewed with considerable consternation.

It is reported that F. D. Misener intends to build a refinery at Broken Arrow, Okla., to refine his own oil. He has a large production of crude oil in that district.

Casinghead gasoline in large quantities is to be extracted from gas by the Empire Gas and Fuel Company on the Love tract, south of Augusta, Kan., in the near future. Work on a large plant is under way.

The Sinclair Oil and Refining Company are making some large purchases in the mid-continent field. The latest deal is the purchase of the interests of Guffey and Gillespie, consisting of a one-fourth interest in the Slick Oil Company's holdings. The price is something near a million dollars. It adds 700 barrels a day to the production of the Sinclair Company. This company recently purchased the J. B. Foster interests in the El Dorado field, in Kansas, and is making preparations to start the laying of a pipe line from Tulsa to Chicago, where an immense refinery will be built, and another will be put up along the Mississippi River near St. Louis.

Now that the Gulf Refining Company has been upheld as the owners of the 10,000 acres in Ferry Lake, Caddo county, Louisiana, upon which there are about 200 producing wells where the company has been operating since 1908, will give a large space of territory that will keep the drill busy for years to come. This case was instituted by the Secretary of the Interior on behalf of the United States, claiming that the title to the land had never passed the State of Louisiana and therefore the lease to the Gulf Company was not valid. The Solicitor General has rendered an opinion which confirms the title to the lease held by the Gulf Company.

California operators are elated over the recent advance in the price of crude petroleum. The advance on oil on all grades up to 36.9 increased five cents per barrel, and grades above that advanced six cents. This is the first advance in the crude oil market since the decline of July 28.

Tank wagon prices of gasoline remain at 21 cents per gallon retail, and same price at filling stations in the larger cities. In some of the villages as high as 25 cents is asked at garages. Michigan prices are lower owing to a lower gravity and ranges according to location from 18 to 25 cents per gallon.

Beaumont, Texas, noted as an oil town, has ambitions. It would like to become an armor plate manufacturing center, under government auspices. Plenty of steel is available, it is claimed, and there is no lack of fuel oil. Many other sections of the country are after the plant, but the politicians will locate it somewhere satisfactory to themselves whether it be on the Atlantic coast or the chain of lakes, the last the most appropriate point for its location on account of the iron ore and coal.

Kentucky Fields.

The rush is still on in Kentucky and is going southward into Tennessee, where thousands of acres of land is being leased by the large producing companies that some years ago turned their back to the field where thousands upon thousands of dollars were lost. During the low price of oil many years ago much test work was done in both Kentucky and Tennessee and good results were obtained, but the inability to market the product at that time was a bad thing for the field, and after a vast amount of money was squandered in testing territory the field was deserted in disgust. Since that time many of those interested in this development have passed away and it is forgotten by the younger generation. Today the two Southern States look as promising as any spot in the country. One thing in favor of both States is the shallowness of the oil sands and the small cost of development work. In the extreme southern part of Kentucky, in Allen county, there is vast changes in the county's oil map of late, as the Scottsville field is being extended. The drawback at this time in the production is such that the railroads passing through the field are unable to handle the product, which is shipped from Scottsville and Petroleum to the refinery at Knoxville, Tenn., and to Louisville, Ky. The field is capable of producing close to 1,000 barrels a day, and that amount takes a train load of oil tanks to handle it. During the past few weeks there has been a rush of Oklahoma and Western operators into the shallow field, and much territory is being picked up where the prospects are good for even small wells. One of the operators was so enthusiastic over the outlook and was able to make a purchase of a lease on the inside and gave straight away a contract for the drilling of twenty wells, which will require about twenty weeks to fulfill, as the oil is found at depths varying from 75 to 500 feet.

There is much talk of the construction of a refinery in Kentucky, but whether or not a plant will be built cannot be said for sure. Several of the towns are making a strong effort to secure the plant if it is built, and among them are such towns as Irvine, right at the gateway of the production of Kentucky, and several other towns, among which is Lexington. Louisville is pulling strong for the refinery, but being located so far from the production will require a heavy expenditure in laying pipe lines and pumping stations to get the crude petroleum from the fields to the refining plant, while if located at Irvine it will only require small lines over Estill county, and save a large expense, as pipe lines at this time come rather expensive, more so than the construction of a refinery plant.

The Long Creek Oil Company has been organized in Allen county and has a capital of $35,000. This concern holds leases on five thousand acres of land in the county, and will start work as soon as material can be secured. The incorporators are W. D. Gilliam, C. Z. Austin, H. L. Grooms, Dr. I. E. Alper and Dr. A. H. Jaconstein. The Bug Chance Oil, Gas and Mining Company, of Ashland, Ky., with a capital of $15,000, has been incorporated by J. H. Burdette, John Murphy and Anna Murphy. The Taylor-Sout-Hay Oil Company, with $15,000 capital, and headquarters at Frankfort, was incorporated by E. H. Taylor, John G. South and C. W. Hay.

Estill county is still the center of activity in the Kentucky field, and the production of that field increases from day to day, and the pipe lines are being extended to care for the outlying production. In the Irvine field, in this county, some fair wells are being brought in at shallow depths. Gaines, Marcum & Neely's No. 6 Alexander tract, pumped 15 barrels; No. 1 Scrivner tract pumped 30 barrels, and No. 1 Avin tract pumped 35 barrels. This firm also drilled a 40-barrel pumper on the Charles Rice tract, another of the same capacity on the John Edwards tract, and a 35-barrel pumper on the Will Alcorn tract. The Meldren-Keating Company's test on the Wilson tract pumped 60 barrels. The United Oil Company's No. 12 Marcum tract pumped 75 barrels, and the seventh well of the company on the Pasley tract pumped 50 barrels, and No. 4 S. P. Marcum tract pumped 25 barrels. The Foster Oil Company's No. 6 Clay Alexander tract pumped 50 barrels, and No. 2 Nelson Tipton tract was a failure. The G. B. Williams Oil Company's No. 6 Tyree tract pumped 75 barrels. The New Domain Oil and Gas Company's No. 3 J. F. McKinney tract pumped 15 barrels, and this company's No. 1, 2 and 3 Henry Alcorn tract pumped 15 barrels each. Williams, Hare & Neely's No. 1 Albert Collins tract was dry, and No. 2 pumped 30 barrels. No. 10 of the same firm, on the Wise tract, pumped 30 barrels. The Ohio-Kentucky Oil Company drilled a light gas well on the Stewart tract. The Wood Oil Company's No. 4 S. P. Marcum tract pumped 35 barrels, and No. 7 Dan Sparks tract was dry. The Hillis Oil Company's No. 10 Rawlins tract pumped 30 barrels. J. E. Willard's No. 11 Rawlins tract pumped 15 barrels. The Yates Oil Company's test on the Rice tract pumped 35 barrels. Gaimes, Marcum & Neely's test on the Collins tract was a dry hole. The Root-Hupp Company's Nos. 8 and 9 James Tipton tract pumped 20 barrels each. The McKnight Company's test on the Scribner tract pumped 10 barrels. The Burnett Oil Company's test on the C. Tipton tract pumped 50 barrels. The Everett Company's No. 2 pumped 75 barrels.

Pennsylvania Fields.

In the Pennsylvania-Southern New York fields but little is being accomplished at this time, as the wells are mostly very small pumpers. In Allegheny county the Carnegie Gas Company drilled a 2,000,000-foot gas well on a town lot in North Braddock, in Dorkless Hollow. In the Ingomar district, Barnsdall & Sauer's test on the Sarvis tract pumped 10 barrels. In the Dorseyville district Fried & Schlage's second test on the Meister tract was dry.

In Washington county, East Finley district, the West Virginia Natural Gas Company's test on the Irvin tract pumped 10 barrels.

West Virginia Fields.

It looks very much as though the trade will be compelled to depend greatly upon the Southwestern counties of West Virginia, for much more prolific territory is developed in the State. The old producing counties are getting pretty well tested, and while a few [illegible] pools may be found in the future, there is no prospects of a gusher pool of any size. Some big wells may yet be found in the limits of gas production when the heavy gas pressure works off, but it is evident that the trade must go further into the interior for new territory. The Cabin Creek district in Kanawha county maintains the best wells and is at present the best looking territory in the State.

In Doddridge county, Greenbrier district, the Hope Gas Company drilled a light gas well in a test on the Merryman tract. The M. C. & S. Oil Company's second well on the Sutton tract produced 2,000,000 feet of gas. In the Central district the Pittsburgh and West Virginia Gas Company's No. 1 Hiley tract, and the Hope Gas Company's No. 4 Pigott tract produced 2,000,000 feet of gas each. The Jefferson Run Oil Company's No. 5 Smith tract and the Sun Gas Company's No. 4 Davis tract were both dry holes. In the Milton district the Hope Gas Company drilled a 2,000,000-foot gas well on the Hamilton tract. In the McClelland district Trainer Bros. could do no better than get a light gas well on the Davis tract.

In Pleasants county, McKim district, A. W. Powell's test on his own tract; Newel & Co.'s test on the Bailey tract, and L. C. White & Co.'s No. 8 Riggs Bros. tract, were all dry holes. The Clarksburg Light and Heat Company's No. 2 Riggle tract pumped five barrels. The Octo Oil Company's No. 34 Holdren tract and Steve Mendenhall's No. 2 Davis tract pumped 5 barrels each. In the Lafayette district the American Oil Development Company's No. 15 Edgell tract pumped 30 barre's.

In Ritchie county, Clay district, Whan & Co.'s test on the McGregor heirs tract produced 2,500,000 feet of gas. The Philadelphia Gas Company's No. 2 Taylor tract produced 3,000,000 cubic feet of gas, as did R. M. Dilbaugh's No. 4 on the Blackburn tract. In the Murphy district Grove & Parrish drilled a 10-barrel pumper in No. 4 Smith tract. The Ritchie Mines Company's No. 23 on its own tract pumped 5 barrels. The Hope Gas Company's test on the McFadden tract pumped 10 barrels, and this company's test on the Marshall tract produced 3,000,000 feet of gas. In the Union district the Carnegie Gas Company found a dry hole on the Cox tract.

In Kanawha county, Cabin Creek district, the United Fuel Gas Company's No. 2 Imperial Colliery Company's tract pumped 3 barrels. The Columbus Producing Company's Nos. 15 and 35 Williams Coal Company's tract produced 50 and 110 barrels. In the Elk district the Ohio Fuel Oil Company's No. 3 Myers tract pumped 15 barrels and the South Penn Oil Company's No. 3 Boggs tract pumped 10 barrels.

In Marion county, Mannington district, Hardman & Huffman drilled the biggest well of the week in No. 3 on the Kendall tract, which produced 320 barrels, swelling the West Virginia production a great deal. The Clayton Oil Company's test on the Hays tract produced 10 barrels. These wells are in the district in which a couple of months ago the big well was drilled on the Batson tract. The latter well maintains a daily production of 240 barrels and is a most remarkable producer. The Hope Gas Company's No. 3 Cambell tract pumped 10 barrels and the Carnegie Gas Company's No. 2 Hamilton tract pumped 5 barrels. In the Grant district the same company drilled a duster on the Arnett tract, and in the Lincoln district the Fairmount Gas Company has a 3,000,000-foot gas well on the Wallace tract.

In Wetzel county, Green district, the Logan Oil Company's test on the King tract pumped 10 barrels and the Hope Gas Company has a light gas well on the Myers tract. In the Grant district the Richwood Oil Company's well on the Mills tract produced 3,000,000 feet of gas. The Carnegie Company's well on the Allen tract and the Hope Company's well on the Furby tract produced a million feet of gas each.

In Lincoln county, Duval district, the Big Creek Development Company's No. 26 Spurlock tract pumped 15 barrels. The South Penn Oil Company's Nos. 61 and 62 Horse Creek tracts pumped 10 barrels each. In the Union district the Hope Company's test on the Lowther tract pumped 10 barrels. In the Griffithsville district the Wayland Oil and Gas Company's No. 1 White tract pumped 5 barrels.

In Roane county, Walton district, the Republic Oil and Gas Company's No. 16 Hively tract pumped 10 barrels. The South Penn Oil Company's No. 9 Gibson tract pumped 15 barrels. In the Smithfield district the same company's No. 15 Farrell tract pumped 15 barrels. In Harrison county, Ten Mile district, the South Penn Oil Company's No. 6 Goodwin tract pumped 5 barrels. In the Sardis district the Hope Gas Company's No. 2 Boggess tract and the Victor Oil and Gas Company's No. 1 Davisson tract pumped 5 barrels each.

In Wirt county, Burning Springs district, G. L. Cabot drilled a light gas well on the McConaughty tract. In Calhoun county, Center district, Park Bowser's well on the Knight tract pumped 5 barrels and the Hope Company's test on the Short tract was dry. In Tyler county, Union district, the A. W. Johns Oil Company's test on the Wells tract pumped 25 barrels. Magner & Neely's test on the Enochs tract is a light gas well and the Benedum Oil Company's test on the Dave Wells tract pumped 10 barrels. In Cabell county, Grant district, the Harshberger Oil & Gas Company's No. 5 Harshbergers tract pumped 5 barrels. In Wood county, Walker district, Uhl & Co. drilled a duster on the Taylor tract.

Southeastern Ohio Field.

A couple of exceptionally fine gas wells were found in the Southeastern Ohio field during the week as well as a few petroleum wells. The field is gradually working to the north in the deep sand fields and Licking and Muskingum counties are making a fair showing for oil, the former always being a gas-producing county.

In Washington county, Macksburg district, Eagler & Co. drilled a 5-barrel pumper on the Eagler tract, Seeley & Co. on the Hupp tract and McConnell & Fisher on the Fisher tract drilled dry holes. One of the same kind was drilled in the Rinards Mills district by the Carter Oil Company in No. 15 Mulinex tract. In the Cow Run district C. A. Peavey & Co. drilled a 5-barrel pumper in No. 56 Torner tract. In the New Matamoras district the Holstein Oil Company's No. 1 Yeater tract pumped 25 barrels. Watterson, Brown & Co.'s test on the Hilly tract pumped 10 barrels and the Matamoras Oil and Gas Company's second well on the Bigrig tract is a fair well.

In Hocking county, Starr district, the Preston Oil Company's No. 1 Backus tract produced 80 barrels. The Haydenville Oil and Gas Company's No. 11 on its own tract produced 50 barrels. In the Ward district the Nypenno Oil and Gas Company's No. 4 Bradley tract pumped 15 barrels. In the Gore district the Fisher Oil Company's No. 7 Lemon tract pumped 10 barrels. In the Green district the

ell, Cochran & Co.'s No. 2 Guess tract is dry, in Benton district the Central Contract Company has a light gas well on the Schall tract.

In Cuyahoga county, Cleveland district, the Sun Gas Company's No. 4 Wolfe tract pumped 20 barrels. The Rocky River Development Company's No. 4 Tetgamler tract produced 4,000,000 feet of gas. The Kundtz-Hulse Company's second well on the Griffin tract produced 5,000,000 cubic feet of gas, while the Highland Development Company's well on the Zeh tract was dry. This company drilled a 1,500,000-foot gas well on the Stearns tract.

In Muskingum county, Licking district, the Columbus Oil and Fuel Company's No. 2 Maddern tract produced 125 barrels and No. 2 Shipley tract pumped 5 barrels. The Blue Rock Oil and Gas Company's No. 1 Bigrig tract pumped 5 barrels and the Clay Oil and Gas Company's No. 5 Cherry tract was dry.

In Monroe county E. E. Grim's No. 1 Kinsey tract and A. Goldstein's No. 10 Wittenbrook tract pumped 5 barrels each. George Vandergrift & Co. drilled a dry hole on the Harper tract and the Kinney Oil Company a 5-barrel pumper on the Kinney tract.

In Jefferson county, Island Creek district, the W. C. Kennedy Company's No. 8 Shaw tract produced 1,500,000 feet of gas. Peters & Co.'s No. 2 Scott tract is a light gas well and Barnes & Co.'s test on the Tweedy tract pumped 5 barrels. In Wayne county, Wooster district, the Ohio Fuel Supply Company's well on the Stanley tract and the Medina Gas Company's well on the Myers tract were light gas wells and the same company drilled a dry hole on the Gault tract.

In Vinton county, Jackson district, the Central Contract Company drilled an 8,000,000-foot gas well on the Tomlinson tract and the Ohio Fuel Supply Company a small gas well on the Traphagen tract. In Ashland county the Logan Gas Company struck a 5,500,000-foot gas well on the Guthrie tract and the Ohio Fuel Supply Company a dry hole on the Fuller tract. In Mahoning county Anderson & Co. drilled a light gas well in No. 2 Israel tract and a dry hole in No. 3 well.

In Carroll county Eaton & Co.'s No. 8 Gates tract pumped 5 barrels. In Noble county the Radom Oil Company's No. 14 Crum tract pumped 5 barrels. In Columbiana county Lewis McClain's test on the Carnes tract pumped 5 barrels. In Licking county the Helsey Gas Company drilled a light gas well on the Conn tract. In Fairfield county, Twiggs, Irvik & Co. drilled a duster on the Rutherford tract.

Northwestern Ohio Field.

Small wells are the result of the drill in the Northwestern Ohio petroleum fields. There is no new territory in sight to take the place of the old and rapidly exhausting territory. In Wood county No. 31 Johnson tract pumped 15 barrels and No. 5 Brown tract was dry. No. 33 Tayler tract pumped 5 barrels. No. 2 King tract was dry and No. 6 Asmus tract pumped 10 barrels. No. 39 Northwestern tract pumped 5 barrels and No. 7 Emerine tract pumped 10 barrels. No. 1 Grolley tract pumped 10 barrels. No. 4 Young tract pumped 30 barrels. No. 16 Killian tract pumped 50 barrels and No. 2 Solar tract pumped 30 barrels.

In Hancock county, No. 12 Gorby tract, the King-Crowther Corporation pumped 35 barrels. No. 2 Basinger tract pumped 5 barrels. In Mercer county No. 2 Fox tract pumped 50 barrels; No. 2 McGriff tract, 25 barrels; No. 1 Binkley tract, 50 barrels, and No. 1 Stilliberger tract, 10 barrels.

In Seneca county No. 19 Cochard tract pumped 20 barrels and No. 1 Dillman tract of the Sun Company was dry. In Sandusky county No. 1 Dudley tract pumped 10 barrels and No. 23 Waggoner tract pumped 10 barrels. In Allen county No. 16 Crites tract pumped 10 barrels. In Lucas county No. 3 Bateman tract pumped 5 barrels.

Indiana Field.

Very little was accomplished in the Indiana field outside of a big well found in the western section of the State. This well is the Murphy Oil Company's test on the Bassinger tract, in the Madison district of Pike county, and showed 225 barrels. In Blackford county Montpelier district, a dry hole was drilled on the Vaway tract.

Illinois Field.

The Robinson field was the active section of Illinois during the week, and consists of all developments in Crawford county. In this field dry holes were drilled on the Wilson, Darrough, Waggoner, Martin, Meskimer, Duncan, Holmes, Postelwait, Mulvane heirs' and Johnson tracts. No. 3 Neely tract pumped 5 barrels; No. 7 Petty tract pumped 15 barrels; No. 16 Wall tract, No. 1 Newlin tract, No. 7 Welsh tract and No. 1 Kent tract pumped 5 barrels each; No. 6 McColpin tract pumped 20 barrels; No. 20 Hill heirs' tract pumped 15 barrels, and No. 4 Busby tract pumped 30 barrels.

In the Bridgeport field of Lawrence county, No. 5 Gillespie tract produced 120 barrels; No. 46 Crackle tract pumped 30 barrels, and No. 2 Applegate tract pumped 45 barrels.

In Clinton county, Carlyle district, No. 1 Varrell tract was dry. In Clark county, Casey district, No. 10 Pate tract pumped 5 barrels; No. 42 Peed tract and No. 3 Bennett tract pumped 10 barrels each. In Cumberland county, Siggins district, Nos. 24 and 25 Walker tract and No. 20 Chrysler tract pumped 25 barrels each, and No. 1 Miller tract pumped 5 barrels.

Tennessee Field.

In the Glen Mary district, in Scott county, Tennessee, the Pemberton Oil Company drilled a 25-barrel well on the large Pemberton tract.

From All Fields.

The wells for the week were located by fields as follows in the high-grade field:—

Field.	Comp.	Prod.	Gas.	Dry.
Pennsylvania	7	25	1	3
West Virginia	59	965	17	9
S. E. Ohio	45	400	14	11
N. W. Ohio	23	395	..	3
Indiana	2	225	..	1
Illinois	39	465	1	10
Kentucky	43	975	1	10
Tennessee	1	25	..	..
Total	219	3,355	34	47
Previous week	223	4,260	30	44
Difference	13	895	4	3

The above wells were distributed by districts and counties in each field as follows:

Pennsylvania.—Allegheny, 3 wells, 1 dry, 1 gas, 10 barrels; Washington, 3 wells, 10 barrels, 2 dry, and Greene, 1 well and 5 barrels.

West Virginia.—Doddridge, 8 wells, 2 dry, 4 gas; Pleasants, 7 wells, 3 dry, 45 barrels; Ritchie, 8 wells, 1 dry, 4 gas, 20 barrels; Kanawha, 6 wells, 190 barrels; Marion, 6 wells, 1 dry, 1 gas, 485 barrels; Wetzel, 5 wells, 4 gas, 10 barrels; Lincoln, 5 wells, 45 barrels; Roane, 3 wells, 40 barrels; Harrison, 3 wells, 15 barrels; Wirt, 1 gas well; Calhoun, 2 wells, 1 dry, 5 barrels; Tyler, 3 wells, 1 gas, 35 barrels; Cabell, 1 well, 5 barrels, and Wood, 1 dry hole.

Southeastern Ohio.—Washington, 9 wells, 3 dry, 1 gas, 55 barrels; Hocking, 6 wells, 1 dry, 1 gas, 155 barrels; Cuyahoga, 5 wells, 1 dry, 3 gas, 20 barrels; Muskingum, 4 wells, 1 dry, 135 barrels; Monroe, 4 wells, 1 dry, 15 barrels; Jefferson, 3 wells, 2 gas, 5 barrels; Wayne, 3 wells, 1 dry, 2 gas; Vinton, 2 gas wells; Ashland, 2 wells, 1 dry, 1 gas; Mahoning, 2 wells, 1 dry, 1 gas; Carroll, 1 well, 5 barrels; Noble, 1 well, 5 barrels; Columbiana, 1 well, 5 barrels; Licking, 1 gas well, and Fairfield, 1 dry hole.

Northwestern Ohio.—Wood, 11 wells, 2 dry, 165 barrels; Hancock, 2 wells, 40 barrels; Mercer, 4 wells, 135 barrels; Seneca, 2 wells, 1 dry, 20 barrels; Sandusky, 2 wells, 20 barrels; Allen, 1 well, 10 barrels, and Lucas, 1 well and 5 barrels.

Indiana.—Pike, 1 well, 225 barrels, and Blackford, 1 well, dry.

Illinois.—Crawford, 19 wells, 9 dry, 1 gas, 105 barrels; Lawrence, 3 wells, 195 barrels; Cumberland, 4 wells, 80 barrels; Clark, 3 wells, 25 barrels, and Clinton, 1 dry hole.

Kentucky.—Estill, 39 wells, 9 dry, 1 gas, 960 barrels, and Wayne, 4 wells, 1 dry, and 15 barrels.

Tennessee.—Scott, 1 well and 25 barrels.

Kentucky-Tennessee.

Barbourville, Ky., Sept. 27, 1916.

Developments on the Tennessee side may be revived by the new strike five miles south of the old Oneida pool, Scott county, and about eighteen miles due south of the established districts of Wayne county. At a depth of 1,100 feet a showing was found for a 20-barrel producer. When the sand was penetrated oil quickly rose in the hole and a slight flow was registered, according to reports from that district. This is the first strike returned from Tennessee this summer. A number of dry holes have been drilled in the Oneida pool during the past few months, resulting in a suspension of further activity in that direction. The Oneida pool last year was regarded as one of the best propositions in the Kentucky-Tennessee field, but the productive territory was very restricted. Leasing has extended to half a dozen Tennessee counties south of the State line, and many test wells are due to be drilled before the close of the year.

On the Kentucky side advance operations are extending into many counties apart from the pipe lines. Operators are locating desirable territory for winter operations and are endeavoring to take in drilling machinery while the highways are in good condition. It is regarded as practically certain that some very productive areas will be opened this winter far in advance of the present producing areas, and there is a scramble to get in on the ground floor. In Southeastern Kentucky, south of the shallow sand Estill county field and east of the old Wayne county developments, hundreds of thousands of acres have been leased in a group of counties including Whitley, Knox, Pulaski, Rockcastle, Clay and Jackson. Many new wells are starting in this area.

In Whitley county, where an old development near Williamsburg has turned out some good producers at 800 feet, two new wells are drilling this week. In Knox county ten wells were contracted for during the week, to be drilled on Richland and Stinking creeks. The first three wells are now being started. Clay county operations will start during the coming week with two tests at Burning Springs. In Pulaski county a dozen new wells will be started within the next few weeks. Three tests have already been drilled in Rockcastle county. Two were failures and one a producer of small capacity. A fourth well, now drilling, entered a producing sand this week with a light showing. It is being drilled deeper. One well was drilled in Jackson county, with a small showing.

New operations in the Estill county field are up to the average. The Furnace district, one of the new centers of operations, has turned out the best of recent completions. One new well in that pool pumped 125 barrels, two others made 100 barrels each, while three are rated as 50-barrelers. In the Miller Creek end of the pool some medium strikes have resulted from late operations. Six new strikes are reported from that end of the field, the best making 50 barrels. As yet no pipe line extends to the Miller Creek production. The Cumberland Pipe Line Company expects shortly to connect up this district, which shows a good settled yield. The output in the county will be substantially increased with this addition. In the old Cow Creek-Ravinna pool good results continue the rule. Several new strikes have been reported, none being of extra large capacity. The wells in these older districts have been given a thorough pumping test, now extending over two months, and operators are highly gratified at the steady average yield being maintained.

The Powell county district, north of Estill, still yields nothing but light pumpers. This end of the field has been somewhat of a disappointment to the trade, who expected to find some wells of large capacity. Three new wells are reported, the best making five barrels.

An interesting test is now drilling in the edge of Bath county, where a search for deep oil is under way. The test has reached a depth of 2,000 feet, with light showings in the two upper sands. The operators expect to go 2,500 feet. The well is now drilling in a flinty formation, with slow progress reported. Several new wells are drilling for shallow oil in Bath county, which came to the front in last month's returns with a wildcat well producing 20 barrels daily.

In the shallow sand pool of Barren county a number of small pumpers have been drilled and a territory is being gradually defined. Three new wells have been drilled in the Scottsville pool, Allen county, the best showing a production of fifteen barrels. Two failures are reported from that district. Deep sand developments are furnishing light returns. Only one new strike is reported from Lawrence county, a 10-barrel pumper being drilled in the Busseyville pool.

Mid-Continent.

Kansas City, Mo., Sept. 26, 1916.

It has been comparatively quiet in the mid-continent oil fields the past two weeks. There has been no change in crude prices save a general stiffening of conditions that affect prices. That is to say, the market-making agency has not announced either a decline or advance, but this fact in itself is indicative of arrestment of the influences that brought about the big slump in price; at the same time the Prairie Oil and Gas Company has been slowly increasing its runs again in the different districts until in many parts of the field it is once more taking all of the oil. It will probably be only a few weeks until every barrel of oil produced in the field will find a prompt and ready market. Refiners are again making time contracts for crude and premiums for high-grade oil at Cushing are again being paid, which shows a changed condition for the better. It is almost safe to bet on an upward turn in the market within a very short time.

These statements are significant. It is worthy of reflection this period of quasi depression has been without parallel in the history of this field. A few weeks ago a general depression seemed threatened. Producers harked back to the time when they were warned to discontinue drilling and did not, with the result that a flood of oil was created, and it was a long while before the market could absorb the oversupply. This time they stopped drilling more generally and a serious condition was averted. There is a mighty object lesson in the events of the past two years, especially the past few months. Had producers stopped drilling altogether when the Prairie first announced that it would take only 75 per cent. of the production, the crude market would have been immediately steadied and there would have no such decline in price as was witnessed. As soon as they did cut down completions by four or five hundred wells a month the market stopped going down. That is exactly what we said would happen in this correspondence at the time. The writer is not a prophet; he holds no information that is not available to any student of economics—or history, if you please. It is simply the history of oil that the price goes down when there is too much oil from overdrilling; and it goes up when drilling is discontinued.

Then why don't oil men when they see the handwriting on the wall instead of daring the pipeline company to cut the price, act in their own behalf, stop drilling, cut down the supply and save the market. They could thus always have a fair price for their product, and it would not cost them anything to secure these results. We have been preaching this for years. Maybe some day it will become the policy of oil men to act for themselves instead of agitating and blaming others for their troubles. And maybe the oil journals of the country will rise above the clouds of prejudice and adhere to principles instead of inflaming the minds of the public. Shall we not pertinently ask, What difference does it make how much oil is or is not held in storage if the purchasing concerns of the field do not want the oil produced and can buy it at a less price? There is no law to make one buyer take more than he needs at a high price while another is permitted to simply supply as cheaply as he can. Crude oil would never sell below a dollar if the producer would assume a conservative and intelligent attitude toward the business—regard it strictly as a business instead of a gambler's game. The gambler plays on chance. Oil is a fixed business, governed by all the economic laws of trade. Until it is so understood and treated there will be alternating periods of prosperity and depression.

Of course, all calculations may be upset in a day. A harvest of gusher wells in Kansas, an unexpected spur of the Cushing pool, a big field north of Healdton, where the McMan Oil Company has just found what appears to be a big well; a prolific pool at Gerber, where the Sinclair Company seems to have opened a new pool—any of these might change the tide, but the present outlook is for an advance in crude prices. It may come next week and it may not come for a month, but we would rather expect an advance in crude before that. The Prairie is now taking all of the oil in most of the districts where it has the facilities; it is largely increasing its runs from Butler county, Kansas; it has announced definitely that it will build another pipe line from Kansas to Alton, Ill., where it will connect with the Ohio Oil Company's Eastern pipe line. It will be 310 miles long. This will give the field another outlet for at least 20,000 barrels more of crude a day. The independent refineries are constantly increasing their demands and are now taking upward of 175,000 barrels a day from the mid-continent field. It is hard to realize what this means to the field; we have become so used to the independents playing an important part in the game. If the producer is only content to let things ride as they are for a few months and does not again rush to the drill and "spill the beans," there is going to be good times in oil this winter. If the reader will recall the writer has not missed very far guessing the coming trend of affairs. It is all a guess, at that.

Elsewhere we refer to the big well drilled in the Fox pool, north of Healdton. It is a different quality of oil than the shallow, heavy gravity crude found at Healdton, being from a 1,900-foot formation, instead of from the shallow sand. It is the first deep production in that field. No one can measure the importance of this well at present. It is too soon. How large a producer it is, is also a question. It flowed over the top of the 80-foot derrick.

During the past week another large well has been drilled in the Hominy pool in the Osage. All the land in this pool is owned by one company, and its influence on the market is nil.

Then there is a big well in the Augusta pool, drilled by the McMan Oil Company. The Augusta field the past ten days has turned in a list of comparatively big producers. Even Blackwell is looking up a little more encouragingly.

A Big Deal Closed.

Another big deal was closed today in New York. It provides for the transfer of the Ponca Refining Company, the Cushing Refining Company and the Producers' Refining Company, at Gainesville, Texas, by the Thwing-Evans-Todd interests to the Dougherty Syndicate, for $5,250,000. The deal had only been pending about four weeks. These are recognized as among the best paying refining properties in the mid-continent field. They have been remarkably well managed and have, as a result, made large profits. The company is said to have had a million dollars in the treasury when the deal was made. The success of the combined companies was due to the organizing genius of F. H. Thwing, and the refinery management of George A. Todd. The Cushing plant is connected by pipe line with the Cushing field, as is also the Ponca plant, while the company built an 8-inch pipe line from Healdton to Gainesville for the Producers' refinery. The Dougherty interests own large oil production in Kansas now. This is high grade oil. They also recently purchased the American refinery at Okmulgee, which is being doubled in capacity. More recently Dougherty purchased the Crew-Levick refineries and foreign business, with headquarters in Philadelphia. This makes the Dougherty Syndicate one of the biggest independent concerns in this field. At one time the Sinclair company had an option to buy the Thwing-Evans-Todd holdings, in fact, Sinclair secured a second option and let it expire.

Kansas Still in the Limelight.

Kansas still continues to rivet the attention of the producers because of the caliber of the wells being found in the El Dorado and Augusta pools in Butler county. The largest well in the mid-continent field recently has just been drilled by the McMan Oil Company on its Foster lease in the heart of the big stuff at Augusta. It is said to be making 200 barrels an hour with 80 feet of sand. One of the peculiar features of this well is that it is in the midst of dry holes; that is, there are dry holes on several sides of the farm. Only three locations south of the northwest corner of the Loomis farm in 15-24-4 the Carter Oil Company only had 13 feet of sand with a flood of water. This would indicate that the strip can only be approximately three-quarters of a mile wide.

It is interesting to note that it is also the McMan Oil Company which brought in the big well the past week at Healdton. This company has had a phenomenal streak of luck ever since it began business. It is interesting to recall that when McFarland and Chapman found themselves the owners of an oil lease in the heart of the Glenn pool, as a result of their real estate operations, Mr. McFarland was trying to recover from a bank failure by drowning himself in real estate transactions. Since that time these two men have made millions of dollars in oil. They have drilled dry holes, but they have been so few and their successful wells have been so uniformly big that their failures have been lost to the public attention.

This latest gusher completion in the Kansas field does not add anything particularly of importance to the Butler county development. This well is in the north end of the Augusta pool. Whether the territory between the rich southwest corner of the El Dorado pool and the northwest corner of the Augusta pool will connect up a gusher deep sand production is a matter wholly yet of speculation. There is room for another Cushing pool, but it is a far guess to predict such at the present time. About nine miles intervene between these two points, and with the exception of a dry hole or two there is a breadth of five or six miles, so that one of the biggest pools in the mid-continent field might be developed between the Santa Fe, the Missouri Pacific and the Frisco railroads.

The Fried Oil Company has completed its No. 3 on the Quest farm, in 28-27-4 and has a 1,500-barrel producer. The Keano Oil Company's No. 2 on the Bell farm in 28-27-4, just west of the town of Augusta, is good for 250 barrels a day, as is also the Continental Oil and Gas Company's No. 4 on the Kirkpatrick farm in 29-28-4, and the same company's No. 5 on the Smith farm in the same section. Marshall and others have completed their No. 2 on the Alexander farm in 8-28-4 for a 150-barrel producer. The Continental Oil and Gas Company's No. 9 on the Varner in 16-28-4 and the same company's No. 13 on the F. Varner, also in 16-28-4, are of like caliber. The Continental's No. 2 on the Hoyle in 11-28-4 is a 300-barrel gusher. It is this sort of wells that is whetting interest in the Kansas development. These are the largest wells being found anywhere in the Kansas field at the present time.

Probably more completions are being recorded up in the Eldorado end of the pool, but these wells are generally reckoned in the shallow sand and are of smaller caliber, although there is more drilling to the deep sand than there has been, and probably there will be a great deal of interest in deep sand drilling in the Eldorado pool. The principal wells in the deep sand at Eldorado are in the southwest part of the field and toward the big wells at Augusta.

The Empire Oil and Gas Company's No. 2 on the Howe farm in 5-26-5 is directly west of the town of Eldorado, and in the southwest part of the field. It is also west of the big well recently drilled by the Wichita Independent Oil and Refining Company. It was drilled to a depth of 2,500 feet and is reckoned as a 2,000-barrel producer. The Wichita Natural Gas Company has brought in its No. 29 on the Hale in 31-25-5 for a 250-barrel producer. The Continental Oil and Gas Company's No. 13 on the Chesney farm in 21-25-5, which is in the north part of the Eldorado field proper, is good for 25,000,000 feet of gas, while Nos. 18 and 19 on the same property are 30-barrel producers. Its No. 15 on the Houston in 36-25-4 is a failure, as is also its No. 1 on the Knox in 15-25-5. The Big Six Oil Company's No. 2 on the Mossman farm in 34-25-5 is a dry hole, but up in 22-25-5 Galbraith & Thompson have a well making 400 barrels a day. The Empire Oil and Gas Company's No. 3 on the Stokes in 33-25-5 is in and belongs to the gusher variety. It looks now as if it will be one of the biggest wells in that field. The same company is finishing up a fine producer in its No. 2 on the Howe in 5-26-5. It is also a deep sander. The Derby Oil Company's No. 4 Wilson at sixty feet in the sand is full of oil and looks like a big producer.

There is considerable interest in operations in Coffey county, Kansas. A number of Oklahoma producers have taken up leases and are starting test wells. Pringle & Reesman are drilling in 26-21-14. Clint Moore, of Bartlesville, Okla., is also starting a test in this territory. The Union Oil Company is drilling at a depth of 900 feet in 10-22-14, about a half mile north of the Moore well. The Mutual Oil Company has started a test in 13-21-15. Several other wells are drilling in this vicinity.

Leases have also been taken in Gypsum Creek township near McPherson, Kan. McPherson is on the main highway between Salina and Hutchinson in McPherson county and northwest of Eldorado. It is in one of the most beautiful and one of the richest farming countries in the United States. It would be almost a shame to find oil in this territory, although several wells will probably be drilled at once as the result of leases already taken.

Near the town of Towanda, the Towanda Oil and Gas Company has drilled a test in 15-26-4 and has a dry hole. The Gypsy Oil Company is drilling in 22-26-4. This is in Butler county.

Little has been heard lately from Cowley county south of the Augusta field. A number of wells are drilling and ought to be in soon. So far the only well of importance is on the Clark farm north of Winfield. The Prairie Oil and Gas Company's test on the Kittleson farm in 15-32-3 is 2,840 feet deep and full of salt water. The water will be cased off and drilling will be continued. It is expected the pay sand will be found at 3,000 feet.

At Douglas the Ohio Oil Company has drilled a well on the Knowleburg farm in 8-29-4. It has just been put on the pump and is good for 60 barrels a day.

At Toronto, Kan., Hout & Warner have a well in 10-26-12, which has been attracting a great deal of attention. There have been rumors to the effect that this well was good for 150 barrels a day. It is impossible to confirm reports. This well is supposed to have made several flows. The territory around Toronto has been so fickle and uncertain that no one is ready to accept the truthfulness of these reports until "they are shown."

Over at Cherryvale, in Montgomery county, Shaw & Dickinson have finished a 40-barrel well on the Hills land in 24-32-18. This well is only 690 feet deep.

A 40-barrel well has also been drilled up in Franklin county in the far north end of the field. The Altoma Oil and Gas Company is credited with this producer, and it is located on the McHerman farm in 20-16-21.

Several very good wells have been finished in Miami county, with one or two dry holes.

The production of Kansas ought to be on the increase judging by wells that have been completed lately and their caliber, notwithstanding the fact that some trade journals quoted the production as having decreased within the past few weeks. The pipe lines are taking more oil than they have been and the expectation is that all of the oil in the field will soon be marketed. The fact that practically all of the development in Butler county has taken place since last March and the producing wells are nearly all now on the beam and most of them have been connected with flow tanks, would indicate that there is considerable water and that the flush production is of a very fleeting character.

On October 16 the application of the stockholders of the Kansas Natural Gas Company for dismissal of the receiver of that company will be heard. The stockholders some time ago formed a reorganization committee and laid out a plan providing for the reorganization of the company by increasing the capital stock from $6,000,000 to $15,000,000 and the sale of the additional $9,000,000 stock to the stockholders at $25 a share for the $50 par value shares, making in effect a 75 per cent. assessment on the transfer stock. This has been underwritten by a syndicate of brokers and the stock will soon be offered for subscription to the stockholders. The proceeds will be used to

pay off approximately $3,000,000 outstanding bonds, receiver's fees, and for increasing the supply of natural gas of the company, which has been entirely inadequate lately. It is expected the Kansas Public Utilities Commission will attempt to assume authority of the stock increase, and some doubt is expressed as to its approval, as some years ago it forced the Kansas Natural Gas Company to reduce its capitalization from $12,000,000 to $6,000,000. The company, however, will claim that as it is engaged in interstate business and is transporting gas from Oklahoma into Kansas, the State Commission has no jurisdiction of its capitalization or finances. It will be interesting to follow the course of the company if Judge Flannelly discharges the receiver. It is a question whether the enemies of the company will be able to go into the Federal court and continue the long drawn out, disgraceful and unnecessary litigation that has nearly bankrupt the company.

A Big Well in the Osage.

Probably the best well drilled lately in Oklahoma is the Tidal Oil Company's No. 4 in 8-23-8, near Hominy, in the Osage. It is good for better than 2,000 barrels a day from the 2,300-foot sand. The territory surrounding this pool is all owned by the Tidal Oil Company, so that no one else has an opportunity to get in on this rich discovery.

There has been more drilling than usual in the Osage since the settlement of the lease controversy in that territory. A good deal of the drilling is for gas. The Osage Council has adopted a resolution requesting the Secretary of the Interior to lease for oil purposes about 18,800 acres of land in addition to that already leased. This land is located in township 29, range 10; township 25, range 8, and township 24, range 8.

Blackwell Holds Attention.

Blackwell and surrounding territory, in spite of tardiness in bringing in new wells, continues to rivet the attention of oil men. A refinery has just started operations in that district and another is to be built at once. Oil is finding a readier market than heretofore, and there is every encouragement for further drilling. Nearly all large operators look upon Blackwell with much favor. It is probably the big pool of that field. This conclusion is based entirely upon the wells heretofore drilled, the sand and its staying qualities.

The Alexander Oil Company, on the Alexander farm in 26-28-1 W., encountered the sand at 2,752 feet. There was no gas or water in the sand and the hole filled up with oil during the afternoon. It has not yet been drilled in and it is impossible to predict its caliber. It looks, however, like a good well.

At Clinton the so-called cement well is making 100 barrels a day.

The Kay & Kiowa Oil Company is on top of the sand in its No. 1 well on the Dillworth farm in 6-28-1 E. This has the indication of being a good well. A town is being built on the Dillworth farm and is to be known as Dillworth, in honor of the owner of the land, who homesteaded when the Cherokee strip was opened in 1893. The new town is 12 miles west of Newkirk, 15 miles north of Blackwell, 17 miles southwest of Arkansas City, and 7 miles each from Peckham and Braman. The oil field short line railroad is being built by Frisco interests to Dillworth.

In the Big Triangle.

One of the excellent wells finished in the Leonard district since the last report from this field was the venture of the DeMac Oil Company in 34-17-13, south of the town of Leonard. The well started off by making sixty barrels an hour. The company is owned by Harry McFann, Ed DeHart and others. The Richelieu Oil Company is drilling another well in 36-17-14, also in the Leonard district. Galbraith and associates are putting down a test in 27-17-14. Wise, Jackson & Hornicker report a 50-barrel well in 36-17-14. Ross & Gries have a rig up and are about to start drilling operations on the R. Kelly farm in 35-17-14. The Sapulpa Refining Company on the S. Kelly farm in 33-17-14 is drilling at about 1,900 feet. The Carter Oil Company is drilling its second test on the English farm in 34-17-14.

There has been less drilling and fewer wells around Boynton lately. It seems as if the rich vein at that place has been thoroughly drilled. The Gypsy Oil Company at present is drilling on the Hill farm in 9-15-16, but at about 1,515 feet got a crooked hole and has been trying to straighten the same for further drilling. Chase & Irvine are gutting down an initial test on the W. B. Smith farm in 7-15-16.

There is considerable drilling in the Bixby pool. At least one fine well has been finished there. C. B. Rogers and associates finished their first test on the Bunger farm in 28-17-13, and it made 800 barrels the first day. It was only drilled three feet into the sand. The Reed well on the Mills farm, in the same section and just west of the Bungar farm well, was only a small producer and developed only a small amount of sand. The Selby test in 29-17-13 is good for 100 barrels a day. The Sinclair Oil and Gas Company is getting ready to drill a test on the Gords farm in 19-16-14. Frank Billingslea is getting ready for a test in 20-16-13. Quite a number of other wells are drilling in this immediate vicinity.

There is more interest than usual in the Broken Arrow district. There are probably twenty strings of tools at work in this territory. All the wells drilling are not gushers by any means. The Best Company, drilling in 9-17-14, belied its name. The venture was a failure, as was also a test drilled in 32-18-15. The Kansas Natural Gas Company got a showing of gas in 1-17-14, but no oil. Macks Amos also drilled in a failure in 23-18-14. Stalker and associates report a 12,000,000-foot gas well in 6-18-15. The Laurel Oil and Gas Company's No. 2 on the Haynie farm in 29-18-15 is credited with sixty barrels a day. F. D. Misener's No. 5 on the D. McHenry farm in 29-18-15 is good for 100 barrels a day, as is also No. 6 on the same farm. The Edgar Oil Company's initial venture on the S. McHenry farm in 1-17-14 is a 5,000,000-foot gas well.

Down at Jenks J. C. Wrightsman and others have finished their No. 2 on the Jennie Samuels farm, and it looks like a gusher. This well is located in 36-18-12.

Routine at Cushing.

The fate of fame is unerring. The great flourish for a day. Nothing material seems to endure. Few things are more fleeting and uncertain than a gusher oil field. Cushing almost proved an exception. It held a place in the limelight longer than usual. It has had almost as many lives as the proverbial cat. But now it seems to have something of the routine of a field whose history is made. Big wells are fewer and farther apart. It is impossible to maintain its output. Small wells are more numerous than formerly. Efforts are now being made to find extensions to the pool. Nearly all of the outside lines have been drilled. There are a few possible exceptions ni the south end of the pool, but even with a gusher well now and then on those exceptions, it is not expected Cushing will maintain its present output. Now and then a good well is found in the old parts of the pool, but these are exceptions. They come under the head of "lucky finds." The Cortes Oil Company comes under this class, with its well in 2-18-7 in the north end of the field, which has just come in at better than 200 barrels a day. It is surrounded by dry holes and cannot affect the situation.

The Southwest Oil Company has completed another well on the MacNec farm in 4-17-7 for 100 barrels a day from the Bartlesville sand. This is not much like the stories of other days. The Sinclair Oil Company has finished its No. 9 on the Lester Keys in 28-17-7, south end of the field, and it is good for about 450 barrels a day. No. 13 on the same land, completed at 2,855 feet, is about a 200-barrel well, and No. 16 is making about 375 barrels a day.

East of Cushing the Sinclair Company has started its initial test on the Peters farm in 4-16-8. The Dallas-Osage Oil Company has a rig up for No. 2 on the Crabtree farm in 11-17-8. It has long been thought that a pool would be found somewhere along the east side of Cushing and many wells have been drilled in anticipation of such a development, but up to this time nothing has been found.

South of the pool in the Stroud district efforts are still being made to extend the productive territory. The Monitor Oil Company is drilling at about 3,000 feet in its test on the Stone farm in 6-15-7. So far nothing has been found to indicate a successful well. The Prairie Oil and Gas Company in 28-15-7 has shut down its test on the Rose Hamilton farm at 3,000 feet and will probably abandon the venture. The Gypsy Oil Company is down about 1,700 feet on the Johnson Loe farm in 15-14-7. The Stroud territory has been looked upon with favor for the past five years, but so far nothing has been developed to support the general impression that oil abounds in that vicinity.

In the Bristow district, southeast of Cushing, and in the vicinity of the well drilled by Litchfield & Sullivan near two years ago and which gave promise of an extension in that direction, there is still a number of wells drilling, but so far without any promise of success. The Gypsy Oil Company is down 2,600 feet on the Cynthia Matthews farm in 17-15-9. It is having trouble with caves. C. J. Wrightsman and associates are underreaming at 3,000 feet in No. 1 on the Alexander farm in 30-14-9. Joe Abraham is down about 2,400 feet on the Tiger farm in 9-15-9. The Prairie Oil and Gas Company is nicely started with its initial test on the K. Reed farm in 7-14-10. There has been a lot of money spent in this territory without success.

In the Kelleyville district John Markham is drilling on the Jessie Harkey farm in 4-17-9. Another test is drilling on the Bennett farm in 12-17-9. It is owned by Hayden and others. The Pulaski Oil Company is down about 2,700 feet with its initial test on the Fred Baker farm in 14-17-10. The same company is drilling on the Tahkaney farm in 14-17-10.

North of Cushing the Romana Oil Company in 36-19-5 reports the completion of a big gas well.

There is the usual amount of drilling around Yale.

A Big Well at Healdton.

Operators in the Healdton district are all agog over the new well of the McMan Oil Company in the Fox spur, to the northwest. It has come in on the gusher order and at a time when the fraternity had generally supposed the Fox spur was a will-o'-the-wisp. Immediately upon the announcement of the completion of this well there was a rush for acreage. Scores of men were scouring the surroundings for leases. Owing to the fact that quite a number of tests had given the territory rather a black eye, acreage had been more or less overlooked and some had been allowed to lapse. All of this has been retaken and prices are soaring. It has been figured for some time by those who study formation that there ought to be a pool in this direction from the Healdton district, owing to the large amount of gas sand found at Fox. It is impossible to tell what this well may develop. Whether it is opening up considerable territory or not will remain for future drilling. The well is located in 20-2-3 W., and encountered the sand at 1,960 feet. The first flow was made when the sand had been penetrated 40 feet. This is the first real oil well found in the Fox pool. Heretofore gas has characterized the district. The perplexing question up to this time has been what direction to pursue from the gas to encounter the oil formation.

Frank Phillips has brought in a 40,000,000-foot gas well in 29-2-3 W., half a mile south of the McMan well. The depth of this gas sand was 1,450 feet. An effort has been made to mud it in, but with only partial success so far. It has been giving a great deal of trouble. The Gypsy Oil Company is down 1,900 feet in a test in 13-2-4 W. The company is also drilling in 28-2-3 W. The Wichita Oil Company is drilling in 9-2-4 W.

There is considerable drilling all around Healdton at the present time, in spite of the low price of oil, which in the Healdton district is now 40 cents. The general expectation of an advance in the market has led some operators to anticipate the same and to resume operations.

The Producers' Oil Company has abandoned its test in 26-4-3 as a failure. The Ft. Ring Oil Company's well in 24-4-3 is looked upon with considerable favor. It is now down about 900 feet, the formations are regular, and it looks as if a well might be brought in. The Golden Gate Oil Company is drilling in 17-3-5, in what is known as the Loco district, in Stephens county. The sand is shallow at this point. At 300 feet a 3,800-foot formation, with a slight showing of oil, was found, but drilling has been continued. Robert Watchhorn is drilling south of Healdton in 16-5-3, but at a depth of 1,800 feet has not yet succeeded in finding the pay. He is also drilling on the Newton farm in 20-4-3 and is down about 1,800 feet. Mr Watchhorn has a test down about 1,400 feet in 7-4-2. He was one of the first operators in this field and his confidence in its future has never lagged. The Gypsy Oil Company is drilling a deep test in 28-2-3, which is now down over 1,600 feet. It is also down about 2,600 feet in a test in 13-2-4. The Producers' Oil Company on the Woodworth farm in 13-4-3 has a rig completed for No. 2. The McMan-Savoy Oil Company in 20-2-3 is down over 1,900 feet, with nothing to indicate a well. The Sinclair Oil and Gas Company is also operating in this field. It has a 50-barrel well in 31-3-3. The top of the sand was encountered at 2,000 feet.

Some Recent Sales.

The Sinclair Oil and Gas Company has purchased the property of the Slick Oil and Gas Company, located in the Cushing field, consisting of approximately 10,000 acres of leases with a daily production of about 1,200 barrels. The transfer embraces some of the first properties developed in the Cushing district. No statement has been made as to the amount involved in the transaction.

Isaac Schuler has purchased the property of the Belmont Oil Company, located in the northern part of the Osage, near the Kansas line, in Chautauqua county, and consisting of 5,000 acres, on which there are eighty-eight wells, with a daily production of 250 barrels; consideration, $275,000. This property has been in the course of development for a number of years. The wells were never very large, but they were good stayers. One of the principal stockholders of the Belmont Company was James B. Haziett, of Independence, Kan.

It is rumored, but not confirmed, that the Sinclair Oil and Gas Company has purchased the interests of J. B. Foster in the Wrightsman & Goster lease in 3-23-3 Eldorado district, Kan. There are about sixty producing wells on the property and it is said the price approximated half a million dollars.

The Thwing-Evans refineries (three) to the Dougherty syndicate; $5,250,000. Deal closed today in New York.

Refiners and What They Are Doing.

Under this head it might be more pertinent to tell what those who are not refiners but aspire to be are doing. The indications are they are getting ready to demoralize the market by overproducing it. The records show the sugar market is overproduced, the sugar refineries having a capacity in excess of consumption. The result is there is such close competition in sugar the margins are dangerously close, only one mill a pound being left after all producing and other expenses of putting sugar in the kitchen have been paid. If refiners had only one mill a gallon for profit and dividends there would be some refinery junk heaps in this land of the free and home of the brave. But that is exactly what the business is coming to at the present rate of refinery construction. It is figured that fifteen new refineries will be added to the list in Kansas alone during the next year if plans are matured. That is going to mean overproduction. Overproduction will mean erasement of margins. Loss of margins means bankruptcy. That was the condition two or three years ago when the light products of petroleum sold at less than their cost and a number of refineries went a-glimmering. The fact is there is not enough production in Kansas yet to take care of as many refineries as are projected. Winter is coming on and with it will come a slackening of gasoline consumption, just as has been witnessed every year of the business. That will mean an accumulation of stocks, so that with the added number of refineries during the coming months, accumulated stocks, etc., there will be more motor fuel than the market can absorb. The people who think oil is the great money-making thing these days were not witnesses two or three years ago when every one in the business was sweating blood.

If crude becomes scarce, as it promises, and there is a large number of new refineries to demand a share of the output, look out for crude prices to soar skyward before the daisies bloom again. Already from 15 to 30 cents a barrel premium is being paid for Cushing crude, and the scarcity of crude is really not yet being felt. Some of the refiners can see ahead, however, to what is coming, and they are cinching their supply while cinching is possible. Watch the scramble after a while. There has been a lot of talk about the Prairie establishing a gravity system of purchasing crude in order to meet the Cushing situation. This is hardly plausible. The Prairie is not buying enough Cushing oil to cause it to do so. Again, the Prairie got its fingers burned with this fire once. Back a dozen years ago the producers of Chanute insisted upon crude being bought by its gravity. The Prairie Oil and Gas Company took the bait. It proved a big mistake. There was more complaint over juggling gravity than there had been over anything else, and the Prairie discontinued the policy. It is not believed it will ever return to it, although it may see fit some time to pay more for crude in a particular district than in others. But if the price of crude gets excessively high the coming winter it is going to prove the undoing of many of the smaller refineries now venturing into the game. It is going to push up the price of gasoline in spite of other conditions. It is very interesting to study the various interventions that come just in the nick of time to save the oil industry from hard lines. Were it not for the extreme shortage of tank cars, for instance, the market might be flooded this fall with gasoline. Tank car builders say there has never been such a demand for cars. Material and men cannot be had to turn out cars fast enough. Practically all factories are almost a year behind in their orders. The tank car is the manufacturers' only means of transportation, and right in the face of this shortage comes the Master Car Builders' Association ordering all cars that will not stand a pressure of sixty pounds to the square inch shall be sent to the junk heap. The association has just announced that this rule has been overwhelmingly adopted and will be enforced. Refiners have appointed a large committee to go to Washington and place the matter before the Federal Trade Commission. They will ask for an investigation of the right of the M. C. B. A. in the premises.

The Marion Refining Company, Claremore, Okla., has been organized with A. M. White, president; A. S. Nelson, vice-president, and J. W. Fry, secretary and treasurer. The company is capitalized for $250,000, but is increasing its capital to $1,000,000. A 1,000-barrel refinery will be erected at Chelsea, Okla., on the unit system, so that the capacity may be increased from 3,000 to 5,000 barrels a day as occasion may demand.

E. B. Carson, sales manager for the Consumers' Refining Company (Shaeffer), since the organization of that company has resigned and will become secretary of Cosden & Co., with charge of sales, on October 1. Mr. Carson is recognized as one of the exceptionally live wires in the refining business and will prove a strong man in his new position.

It is expected that George N. Moore will leave the Petroleum Products Company and assume his new duties as general manager of the Consumers' Refining Company about the first of the coming month. His headquarters will be in Chicago.

L. L. Marcell, formerly with the Chanute Refining Company, has made arrangements to re-embark in the refining business immediately. With associates he expects to begin the construction of a refinery at once. These plans have nothing, however, to do with his Economy Oil and Gas Company of Tulsa, Okla.

The last Kansas Legislature passed a bill reducing inspection fees from 10 cents a barrel to 3 cents a barrel on both kerosene and gasoline. Governor Capper, for political purposes and to continue a revenue to the State from oil inspection, in spite of court decisions, vetoed the bill. The constitutionality of the law was then submitted to the Supreme Court of Kansas, and the court decided that the State could not enforce the statute and directed that $123,000 paid by refiners under protest should be returned to them. The courts specifically stated that the State could not discontinue oil inspection under this decision. Governor Capper, still in defiance of the decision of the Kansas Supreme Court itself, chafing and smarting under the political blunder he had made, insisted that refiners should come in voluntarily and pay into the State Treasury for inspection 3 cents a barrel on both kerosene and gasoline. The refiners had objected to a 3-cent rate when the bill was originally introduced in the Legislature, but tacitly accepted it because it seemed to be the best they could do up to that time. But during the subsequent year the consumption of these products in Kansas increased to such an extent that even 1 cent a barrel would now pay the expense of inspection. But Governor Capper did not wish it to appear that he had lost the State anything by his blundering action. Various meetings were held at the office of the Governor, and the Governor very bluntly stated that if the refiners refused to pay an inspection fee that would not the administration and the State a suitable revenue, ways would be devised of "getting" the refiners. The Governor does not seem to be able to appreciate the fact that for the oil men to come in and volunteer to pay almost three times the cost of inspection would be an insult to the Supreme Court to which they argued that any inspection fee in excess of the cost of the same was illegal and unconstitutional, and which the court so held. Governor Capper does not realize that he is asking refiners to subscribe to a violation of the law simply to meet his political whims. Governor Capper made his threat so strong that the Standard Oil Company and one of the largest refiners agreed to pay 5 cents a barrel on the inspection of kerosene only. The majority of the people of Kansas want inspection on both kerosene and gasoline. The Kansas Oil Men's Association, composed principally of jobbers, has adopted the following resolution, sending the same to Governor Capper:—

Whereas, The Supreme Court of the State of Kansas has decreed that the collection of an inspection fee in excess of the actual cost of maintaining such inspection is unconstitutional: therefore be it

Resolved, That we, the jobbers and distributors of Kansas, hereby express our desire that a competent inspection department be maintained for the inspection of both kerosene and gasoline, which is sold to consumers within this State. We wish to emphasize the fact that we consider it just as necessary to inspect gasoline as kerosene and feel that gasoline should pay its proportion of the cost of inspection, rather than placing the entire expense on kerosene.

Basing our ideas on figures compiled from last year's inspection, we believe that an inspection fee of one cent per barrel on both kerosene and gasoline will pay all expenses incidental to the proper operation of a competent inspection department and in addition will take care of any incidental expenses necessary to the proper maintenance of this department.

In accordance therewith we are willing to pay an inspection fee amounting to one cent per barrel on all kerosene and gasoline inspected for our different interests during the period beginning August 1 last and to pay on the fifth of each month thereafter at the same rate for all inspections made the month previous. If at the end of 1917 it is found that an inspection charge of one cent per barrel on gasoline and kerosene does not cover the reasonable cost of efficiently maintaining an inspection department, then we agree for the year following to pay such sum per barrel on the oils mentioned as will provide for any deficit which may have occurred during 1917, together with the estimated cost for 1918. This to be determined by basing the consumption for 1918 on that of 1917. This to be in effect until such time as the Legislature may meet and pass a law along these lines, to meet the actual expenses of the department.

This would seem to be a very fair proposition to the Governor and wholly in accordance with the Supreme Court's interpretation of the law. Governor Capper has suggested, however, that it is his determination to increase the number of inspectors so that the cost will be more burdensome upon the refiners. Just why the Governor has taken the attitude is hard to understand. The oil men have not yet learned what his attitude is going to be on the resolution adopted by the Kansas Oil Men's Association.

The Pan-American refinery at West Tulsa, Okla., has begun operations. It will handle about 2,000 barrels of crude a day. The company has already taken steps to increase the capacity of the plant.

It is understood the North American Refining Company, with a 2,000-barrel plant at Pemeta in the Cushing district, is being recapitalized for $3,000,000, with the par value of $5. The company has been in operation about a year and is admirably located so far as its crude product is concerned.

George C. Priestley, general manager of the Crew-Levick Company, sailed a few days ago for Europe on a business mission in connection with that company. He expects to be absent about six weeks and place large orders for European shipments within the next few months.

A year or so ago N. H. Foster, a small oil dealer at Protection, Kan., earned a reputation for selling gasoline and kerosene under the Standard Oil Company and other competitive names. During the period when there was no margin for him to get away with such practices nothing was heard from him; but recently when conditions improved and there was a margin for the marketer Foster again bobs into the limelight, underselling everybody around him. He had declared that it was nobody's business how he marketed his goods. Foster found it possible to slash prices through the fact that he, as a retailer, was buying from the manufacturers at wholesale prices instead of buying through jobbers. It appears that he has had some difficulty lately in getting oil products in wholesale lots and has asked the Governor of Kansas to come to his rescue. Anything that looks like getting the oil man's goat seems to be pie for the Governor of Kansas, and he has given the matter over to the Attorney General for investigation. Mr. Foster is quoted as having made the bold assertion that the refiners' association has notified him that they will not sell him gasoline and kerosene because he is a price cutter. If Mr. Foster made the statement he has stated what is not true, for no such edict has gone to Mr. Foster from the refiners' association. He may have been so notified by some of the refiners, but under the Clayton act a manufacturer has the right to choose his customers, and Mr. Foster does not appear to come under the head of a very desirable customer. Cutting under established market prices has come to be looked upon as reprehensible in good business circles. Uniformity of prices over the country seems to be the desire in these days.

It is rumored the Cosden Refining Company, the Cosden Oil and Gas Company, the Union Petroleum Company and other large independent interests are to be amalgamated.

The Sinclair Company expects delivery of pipe for its eight-inch line to Chicago by October 1. The line will be built by way of Cisanute and will give the company's plant there (formerly the Chanute Refining Company) its first real opportunity to make money as other refiners with pipe lines have. The Chanute refinery has always had to ship in by tank cars its high-grade crude. This will mean a great deal to the company so far as profit-making is concerned. From Chicago the line will proceed to Chicago via Madison, Ind., where a refinery, it is said, will be erected. Then at Chicago another plant will be erected. Chicago is looked upon as a very promising field for the Sinclair interests. John A. Bell, the Pittsburgh operator and one of the big men in the business, and C. A. Braley, lawyer and oil man, have been elected members of the board of directors of the Sinclair Company. The stock of the company today jumped to $44. It is predicted by knowing ones it will soar very rapidly to possibly $75 a share. Then there will be a lot of fellows who will be kicking themselves—either for selling or for not buying when it was low.

Scattered Drilling.

In that vast territory south and west of Cushing there is a considerable amount of drilling, and, in spite of the fact that many holes have been put down the proper depth, nothing of any great importance has been developed although from time to time sand with traces of oil has been found sufficient to seem to warrant at least further prospecting; and it is characteristic of the oil man that he never lacks courage where there is the possibility of reward. He works on the theory that one good well will very soon pay for a considerable number of dry holes, providing there is any kind of a market at all for his product, and the present market is regarded as quite satisfactory.

The McMan Oil Company is still drilling in its Holdenville test in 34-8-8. The venture has now reached a depth of 3,225 feet, with nothing to indicate a paying well. It is hardly probable since this depth has been reached that oil will be found.

Over in the Paden district the Gypsy Oil Company is down about 3,250 feet in its test in 6-13-7, and so far the well has been a disappointment. The same company has a fishing job in its test in 15-14-7. The Prairie Oil and Gas Company is down 2,000 feet with its second test on the Rogers farm in 8-12-7. It is still shut down in its test on the Grayson farm in 10-12-7. This hole is 2,800 feet deep. Its No. 1 on the Board farm in 17-12-7 is 3,400 feet deep.

At Okfuskee the Wolverine Oil Company has started a test hole on the Powers farm. This is in 24-13-10. On the Bowell farm in 26-13-10 Downing and others have just started spudding in a wildcat test. The Prairie Oil and Gas Company is down 2,550 feet in what is very likely to prove a failure on the Frick farm in 34-12-9. The Prairie Oil and Gas Company is down about 2,500 feet in its initial venture on the King farm in 34-12-9. Richards & Williams are drilling their No. 1 on the Coody Cobb farm in 27-13-8. The tools have been "lost in the hole," but it is now 2,800 feet deep. In the northeast part of Okfuskee county, west of Okmulgee, the Carter Oil Company has finished a 50-barrel well in 23-10-13. The sand was encountered at 2,670 feet. The well has not yet been shot. The Carter Oil Company is also drilling its first test on the Tomochee farm in 24-13-10, and its No. 1 on the McDonald farm in 26-13-10. The Wolverine Oil Company is drilling at 1,200 feet on the Martin farm in 23-13-10. C. T. Cramer is drilling in 11-13-10. The John Owens Oil Company is down about 1,100 feet in a test in 24-13-10. The Okfuskee territory begins to look like an oil field.

In Lincoln county, Oklahoma, the Oklahoma Star Oil Company has finished a rig and is spudding in a test in 14-13-4.

There is a great deal of interest in the territory around Gerber, east of Enid and southwest of Blackwell. The Hoy well, located in 25-22-4, Garfield county, has been flowing at intervals and on some occasions has spouted considerably above the top of the derrick. It has the indications of being a large producer. The nearest production is fifty miles distant. The sand was reached at 1,130 feet and was not penetrated over two feet. If this territory develops some large producers, it will be a triumph for geologists, as all the leases in this neighborhood were taken up wholly on the strength of geological dope. The Sinclair Company has a large amount of holdings in this vicinity, the territory having been originally mapped out by the old Chanute Company. Of course, it is too soon to make any predictions as to the future of the field. A farmer named Von Hoesen has sold a lease on his farm located in 17-23-3, about two and a half miles from the Hoy gusher, for $17,000 cash. The Mid-Continent Petroleum Company is drilling a test in 22-23-2. The Prairie Oil and Gas Company is pretty well down with its test in 10-20-5. Glenn Braden is drilling at 1,600 feet on the Weaver farm in 23-23-3. The Oklahoma Star Oil Company has just started a test in 33-26-3. The McTom Oil Company is drilling in 25-7-2 E. The Holmes and others are drilling in 5-7-4 E. The Western Gas and Fuel Company has just got nicely started with a venture on the Williamson farm in 10-2-8 W. The Black Hawk Oil Company on the Williams farm is drilling a test in 21-2-8 W.

At Earlsboro, Okla., Haught and associates are trying their luck on the Josey farm in 34-9-5. The Black Hawk Oil Company is rigging up for a test at Doyle in 10-2-5 W.

New wells are being started at Ada. Warrener, Merbine and Manford. The 1916 Oil and Gas Company has a small test just completed in 9-6-6 E.

The Prairie Oil and Gas Company is getting ready to drill a test on the Calvin Bleeker land in 28-10-2, Pottawatomie county. The same company is drilling deeper its test on the Williams farm in 28-15-7. The well is dry now at a little over 3,000 feet.

At Adelle Nelson and others are drilling in 32-23-18.

In Paul's Valley the Oklahoma Star Oil Company is drilling on the Sosin farm in 4-3-4 W. The hole is down about 1,200 feet.

At Atlee in 9-5-4 W. the Norfleet Oil Company has a test at a depth of about 1,100 feet and drilling is continuing.

Bankers, Hanson & Moore, of Perry, Okla., have started a test in 11-21-4 at the town of Covington, Okla.

The Monitor Oil and Gas Company is down almost 3,000 feet with its important test in 6-15-7.

Scattered Field Notes.

All oil stocks are soaring and the general impression is that records will be made this winter. The Prairie Pipe Line Company is a strong favorite at this time. It has suddenly jumped to over $300. It is generally understood the company will shortly declare a 100 per cent. dividend. That is going some for a company only three years old. That is what the government did in segragating this branch from the Prairie Oil and Gas Company—just made it possible for it to make that much larger profits. It is a good thing once in a while to reflect upon the result of our dictation of business conduct.

There seems to be an exceptionally large number of wells drilling in various parts of the field at present. The coming winter promises to show much activity in all parts of the field.

Wildcatting is prevalent over a large part of Kansas, but nothing of real importance has been discovered recently. A gusher may be reported any day. There are great possibilities if the geologists are to be relied upon.

A 300-barrel well has just been drilled by L. L. Morrison in 31-18-12, east of Sapulpa, in what used to be called the Taneha district. It is one of the best wells drilled up that way in a long time.

The Texas Company and the Gulf Pipe Line Company are now taking all of the oil from wells connected to their lines.

A goodly number of fine wells has been brought in around Okmulgee the past week or two. Volger and associates report a 100-barrel producer in section 19, just south of Okmulgee. The Brady's Bend Oil Company has a 50-barreler in 33-14-14. A bunch of small wells has been drilled lately in the Morris district. Up in the Beggs pool the Producers' Oil Company in 5-14-12 has a 100-barrel producer, as has also the Oklahoma Natural Gas Company in 5-14-12.

California.

Los Angeles, Cal., Sept. 25, 1916.

During the past week the Standard Oil Company announced an advance of 5 cents in the prices of crude oil at the well in California, adding a new schedule which benefits exceptionally light oil.

Much has been said of the possibilities of the new field near the city of Ventura, where the State Consolidated has been drilling a wildcat well. This well, while in the process of being brought in, has caused much trouble owing to the enormous gas pressure. Its future until last week was unknown. Last week the well began to produce oil of 52 gravity, the highest yet found in California. The well No. 2 is doing about 100 barrels per day, the oil coming up from the 2,250-foot level.

This well opens up, conclusively, a new field, of which the extent and capabilities are wondered at by corporations on all sides. The Shell Company's holdings are on all sides of the State Consolidated, so it in all probability will profit the most should the field have any extent. Wells have already been started to the east and west of the proven property. In all the Shell Company has taken up a total of about 13,500 acres.

All the fields are maintaining a steady amount of new work. Few sections stand out much ahead of the others in this line. The North McKittrick Trail reports five more new wells to be started soon northwest of McKittrick. The Ventura find will no doubt stimulate activities in that section.

Crude Oil Prices Advanced.

Following closely on the large under-production as disclosed by the various statistical reports for the month of August, when stocks were drawn upon to the extent of 1,500,000 barrels, the Standard Oil Company advanced the price of crude oil in California last week. The drawing on of reserve oil stocks has been constant in California during the past six months regardless of the several advances in prices of crude oil, and although the prices have stimulated no little activity and the production has been steadily increasing, the shipments at the same time have always been more than production.

The purpose in advancing the prices is primarily to stimulate drilling for light oil, although at the refineries both heavy and light are very acceptable. There is now a big demand for products refined from light oils. The independent refiners are finding it very difficult to keep supplied with light oil in the south, although they have a large market for the refined goods. The larger companies are making every effort to secure for themselves all the light oil available and have bound up the independent producers in many cases with ironclad contracts for long terms.

The Standard announced on September 19 an increase of 5 cents a barrel for all grades of oil, raising the lowest priced from 14 deg. and including 17.9 deg. from 63 cents to 68 cents. From crude up to 25 gravity the rule of 1 cent increase for each degree of gravity continues to exist. For higher grades a new ruling goes into effect that may have far-reaching effects upon the producers of high grade and upon the independent refiners alike, encouraging the former and discouraging the latter. Under this new ruling oil above 25 gravity commands an increase of 2 cents for each additional degree up to 36; for 37 gravity $1.02 a barrel and 3 cents for each degree above the last named grade. Therefore the price for 25 gravity oil is 76 cents; for 26 gravity, 78 cents; 27 gravity, 80 cents, etc., up to 37 gravity, which is priced at $1.02 a barrel. Then 38 gravity would be $1.05 per barrel, etc.

There is only a limited amount of oil produced in California of these last grades. It is found in Ventura county, the Fillmore, Pine and Little Sespe regions, the Lost Hills-Belridge country and the Oil City pool. The higher price may be expected to stimulate the output. The production of oil that may profit most by the new schedule is that of the State Consolidated's new field near the city of Ventura, which is 52 gravity. The price under this schedule would be $1.50.

The new prices are given below for crude oil in California:—

SAN JOAQUIN VALLEY FIELDS.
(Kern River, Midway-Sunset, McKittrick, Lost-Hills-Belridge, Coalinga.)

Gravities—	Effective Sept. 9.
14 deg to and including 17.9 deg. gravity	$0.68
18 deg. to and including 18.9 deg. gravity	.69
And for each increase in gravity of one full degree above 18.0 deg. gravity up to and inclusive of 24.9 deg. gravity, 1 cent per barrel additional.	
25 deg to and including 25.9 deg gravity.	.77
And for each increase in gravity of 1 full degree above 25.0 deg. gravity up to and inclusive of 36.9 deg. gravity, 2 cents per barrel additional.	
7 deg. to and including 37.9 deg. gravity.	1.02
And 3 cents for each degree of gravity above the last-named grade.	

VENTURA COUNTY.

25 deg. to and including 25.9 deg. gravity	$0.77
And 2 cents for each degree gravity above 25 deg. gravity up to and including 36.9 deg. gravity.	
37 deg. to and including 37.9 deg. gravity	1.02
And 3 cents for each degree gravity above the last-named grade.	

WHITTIER-FULLERTON FIELD.

16 deg. to and including 17.9 deg. grav.	$0.68
18 deg. to and including 18.9 deg. grav.	.69
And for each increase in gravity of 1 full degree above 18.0 deg. gravity up to and inclusive of 24.9 deg. gravity, 1 cent per barrel additional.	
25 deg. to and including 25.9 deg.....	.77
And for each increase in gravity of 1 full degree above 25.0 gravity up to and inclusive of 36.9 deg. gravity, 2 cents per barrel additional.	
37 deg. to and including 37.9 deg.....	1.02
And for each increase in gravity of 1 full degree above 37 deg. gravity, 3 cents per barrel additional.	

Casinghead Gasoline in the South.

Generally in the wake of an advance in crude oil prices the gasoline market takes a jump. As yet the price of 19 cents per gallon, which has been maintained for several months without change, has showed no marked manifestations of continuing the precedent. There was a time when the prices were connected so that one could hardly be made without the other. At present, however, outside influences, like the manufacture of casinghead gasoline, play no small part in keeping the two grades of oil apart.

In the South today there are eleven casinghead gasoline plants in active operation, with a total daily output of 15,300 gallons. Two new plants are in the process of making. Besides the gasoline produced by the plants in Southern California, several thousand gallons of casinghead gasoline are brought from the Midway and Santa Maria fields. Both compression and refrigeration are employed, quite often in conjunction with each other. Nine of the plants are in the Fullerton district. Following is given the name of the plant with production:—

Fullerton.—Olinda Gasoline Company, 1,500 gallons; Union Oil Company, 1,500; Hurley-Smith-Collins Company, 1,500; La Habra Gasoline Company, 2,000; Pacific Gasoline Company, 1,500; Brea Gasoline Company, 3,000; Puente Oil Company, 500.

Salt Lake.—Rancho La Brea Oil Company, 1,500 gallons; Hurley-Smith-Collins, 1,000; A. F. Gilmore, 300.

Ventura.—Montebello Oil Company, 2,000 Calumet, 1,000.

New Work.

The report of the State Mining Bureau on new work shows for the week ending September 16, 1916, but five new wells, as compared to the total during the week previous of thirty-one. The amount of new work being done cannot be figured accurately by comparing the total figures from week to week. A general average must be secured for a general idea of the new activity. Since the first of the year 514 wells have been drilled, or an average of approximately 13 wells per week. The average per week for the past month or so has been below this figure regardless of the exceptionally large number of new wells reported the week previous to the last report, being 31 in number.

The Associated is responsible for three of the five new wells reported, and will start two in the Kern River field on section 30-28-28, and are in the Midway field on section 26-31-23. The Associated, which is controlled by the Southern Pacific Railway Corporation, is being pushed to the limit by the holding company, which is among those of the largest consumers of fuel oil in the world. Its own properties have of late been insufficient to supply the required amount of oil used as fuel, and in consequence, the Associated is being kept very busy developing its properties.

Fourteen wells were reported ready for the test of water shut-off, as compared to 19 the week previous. Eight were reported for deepening or redrilling, against 7 the week previous. No abandonments were reported.

Following is a list of the new work reported during week ending September 16, 1916:—

Field.	Begin drilling new wells.	Test of water shut-off.	Deepen or redrill.	Abandoned.
Valley—				
Midway-Sunset	2	8	2	..
Kern River	2	..	3	..
Coalinga	..	1	..	..
McKittrick	1	1	..	..
Lost Hills-Belridge	..	2	3	..
Coast—				
Santa Maria-Lompoc	..	2	..	..
Summerland	..	..	..	..
South—				
Fullerton-Whittier	..	..	..	..
Ventura Co.-Newhall	..	..	..	..
Los Angeles-S. Lake	..	..	..	..
Total	5	14	8	..
Previous week	31	10	7	1
Difference	26	5	1	1

Various Field Notes.

Oil land values in Ventura county are said to have been advanced considerably since E. L. Doheny, head of the Pan-American Oil and Transportation Company, paid $1,800,000 cash for acreage in that county. Some of the land acquired by Mr. Doheny adjoins 800 acres of proven territory belonging to the Sulphur Petroleum Company. It is reported that in sections near the Sulphur Petroleum Company's property $150 an acre has been refused, where $3 was previously considered a fair price.

The Mascot Oil Company, in section 26-32-23, Kern county, is redrilling No. 24 well from a depth of about 800 feet. The Mascot has 37 wells producing on this property. Its run tags total about 24,000 barrels a month. The Mascot has 160 acres in its lease, this being of such nature that it does not expire for twelve years. The oil is sold by contract on a sliding scale, so that the company derives full benefit from the recent advance in the price of oil.

The Amalgamated Oil Company is down 2,700 feet at Hualde No. 8. At No. 9 a new rig has been completed and drilling commenced. Number 10 is making good progress, having reached the 2,800-foot mark. The work of shutting off water is underway at Hualde No. 17, which stands cemented at 2,900 feet. On the Anaheim lease the Amalgamated has finished redrilling No. 6 and has the well on the pump. At No. 30 a new rig has been completed and at No. 40 a test for the water shut-off is being made.

The Agency's sales during July were but a comparatively little under those of June, which exceeded 1,500,000 barrels. July's were more than 1,400,000. The price was 50 cents a barrel to the producer, the same as in June. It will be the same for August.

Mexico.

Houston, Tex., Sept. 23, 1916.

The rich Panuco oil field in Mexico is under water to the depth of five to ten feet, due to the flooded condition of the Panuco River. It has been raining for a month, and the river has overflowed to such an extent that one can go to any part of the town of Panuco by boat.

The Texas Company has not been doing anything in that oil field for weeks. Not a fire has burned in the field since the flood began, the crops are ruined, and suffering among the people, who have moved to higher ground, will be intense.

The floods caused by the heavy rains in the region of Tampico have washed down sand and silt at the mouth of the river until the water is so shallow that boats loading with oil cannot carry their full capacity. They can only carry from one-half to two-thirds their ordinary load.

In a fight a week ago between Villaists and Carranzists one more innocent American was sacrificed. G. A. Bungey, a well-known oil man of Tampico, formerly a resident of Houston, was shot and killed at the camp of the Aguila Oil Company, Tanguijo, where Mr. Bungey was in charge. He was lying on his cot in one of the company's houses when the fight took place and received six shots through the body.

Tom Lee, a well-known lawyer of San Antonio, has become associated with the legal department of the Gulf Refining Company and will be located in Mexico, where he will look after the legal interests of that company. Mr. Lee has recently been connected with the Texas-Mexican Investment Company, and has visited Washington in behalf of the claims in connection with leases to American citizens due to war and bandit activity in Mexico.

PETROLEUM CHARTERS.

Following is a list a vessels chartered and loading or to load petroleum at New York and Philadelphia. Quantities are refined, in barrels, unless stated otherwise:—

NEW YORK.

Week ending March 10.
Str Seward, River Plate, three trips, basis $1.25, one port, June.....cs. 120,000

Week ending March 24.
Br bark Grenada, Australia, $1.20, Oct.....cs. 85,000

Week ending March 31.
Br bark Annie M Reid, Australia, $1.20, Sept.-Oct.....cs. 80,000
Nor bark Dione, United Kingdom, May-June.....bbls. 3,500

Week ending April 21.
Br bark Wm T Lewis, Australia, $1.20, Sept.-Oct.....cs. 80,000

Week ending May 5.
Nor bark Spartan, United Kingdom.bbls. 13,000

Week ending June 9.
Nor bark Kringsjan, Buenos Aires, ref. prompt.....bbls. 9,500
Jap str Sanno Maru, four ports Australia, or six ports New Zealand, basis $1.40, June-July.....cs. 140,000

Week ending June 30.
Nor ship Acadia, two ports, Canary Islands, prompt.....cs. 60,000
Sch James B. Burke, Buenos Aires, with bbls. and cases, prompt.....

Week ending July 7.
Br str Lord Derby, Brisbane, Rockhampton and Brisbane, $1.40, Aug..cs. 150,000

Week ending July 21.
Dan str M J Mandil, River Plate, 90c., Aug.-Sept.....cs. 70,000
Dan str I P Justesen, same, Sept.-Oct., cs. 70,000

Week ending August 5.
Br bark Hougomont, same, Sept.-Oct. cs. 90,000
Br bark Lobo, Australia, 95c., Oct.-Nov.....cs. 34,000

Week ending August 11.
Nor ship Nor, a French Atlantic port, two trips, August, ref.....bbls. 9,000

Week ending August 18.
Str Kalaarstind, Reyjavik, Sept., ref., bbls. 6,800

Week ending August 26.
Str Harry Lukenbach, Greece, $1.25, Oct.....cs. 87,000

Week ending September 1.
Br Bark Juteopolis, Australia, Nov. Dec.....cs. 100,000
Russ ship Glenard, South Africa, Sept.-Oct.....cs. 70,000

Week ending September 8.
Sch Bayard Barnes, Gold Coast, basis 85c, four ports, prompt.....cs. 40,000

Week ending September 15.
Br bark Inverneill, Australia, Sept.-Oct.....cs. 80,000
Br bark Vimeira, same, Nov.-Dec....cs. 80,000
Br bark Archibald Russell, same....cs. 85,000
Belg ship L'Avenir, same.....cs. 85,000
Swed bark Hofrid, Buenos Aires, Oct., bbls. and cs. ....

Week ending September 29.
Sch Normandy, Rouen, Oct., ref...bbls. 2,500

PHILADELPHIA.

Week ending June 2.
Swed bark Embla, Scandinavian port, June, ref.....bbls. 2,100
Russ bark Hiram, same.....bbls. 1,800

Week ending June 29.
Swed bark Jonstrop, Scandinavian ports, July, ref.....bbls. 2,600

Week ending July 7.
Sch Dorothy, Liverpool, July.....bbls. 4,500

Week ending August 11.
Sch Henry F Kreger, Lisbon.....cs. 6,000
Nor bark Fido, France, prompt, ref.bbls. 7,500

Week ending August 25.
Br str Earl of Elgin, United Kingdom, ref, prompt.....bbls. 25,000

Week ending September 22.
Str Maryland, Liverpool or London, prompt, ref.....bbls. 18,000

Week ending September 29.
Br str (tank) Saxonian, 2,978 tons, United Kingdom, ref, Oct.....gls. 1,200,000

PETROLEUM CLEARANCES.

The following are the clearances of petroleum from the ports of New York, Philadelphia, Baltimore, Boston, New Orleans and San Francisco:—

NEW YORK.

PETROLEUM, ILLUMINATING.—2,031,685 gls, $129,781, France
44,095 gls, $3,801, Newfoundland
55,100 gls, $1,816, Hayti
115,085 gls, $11,646, Argentine
2,500 gls, $344, Colombia
5,000 gls, $645, Ecuador
3,000 gls, $402, Peru
940 gls, $116, Venezuela
771,600 gls, $84,883, Australia
277,940 gls, $27,794, British West Africa
172,480 gls, $18,762, British South Africa
1,850,135 gls, $102,887, France
3,617,815 gls, $205,645, England
12,500 gls, $1,350, Newfoundland
2,250 gls, $276, Cuba
45,000 gls, $5,164, French West Indies
130,000 gls, $17,420, Brazil
9,000 gls, $1,132, Peru
576,000 gls, $58,172, Uruguay
1,625,130 gls, $143,551, China
500 gls, $70, France
27,150 gls, $3,840, England
21,795 gls, $2,362, Bermuda
96,000 gls, $9,984, Argentine
75,000 gls, $6,563, Brazil
10,580 gls, $1,349, Venezuela
53,000 gls, $27,346, British South Africa
718,515 gls, $46,975, France
1,693,805 gls, $88,920, Netherlands
984,455 gls, $41,838, Canada
5,000 gls, $441, Panama
10,310 gls, $1,237, British West Indies
260 gls, $27, Dutch West Indies
1,625,555 gls, $79,744, British India
661,770 gls, $72,795, Australia
218,350 gls, $23,800, British South Africa
103,800 gls, $11,165, Portuguese So Africa
500 gls, $140, Netherlands
CRUDE—150,000 gls, $15,000, Colombia
FUEL AND GAS OILS.—1,785,825 gls, $80,367, England
5,350 gls, $425, French West Indies
5,195 gls, $493, Cuba
63,330 gls, $6,649, France
GASOLINE—100 gls, $30, Cuba
475 gls, $158, Chile
13,500 gls, $3,240, Newfoundland
8,500 gls, $2,635, Cuba
29,400 gls, $7,951, French West Indies
33,250 gls, $9,449, Brazil
4,000 gls, $1,020, Italy
9,820 gls, $2,505, France
7,500 gls, $1,874, British West Indies
6,645 gls, $1,647, Cuba
600 gls, $105, Chile
NAPHTHA.—489,185 gls, $133,581, Argentine
1,900 gls, $622, Chile
672,800 gls, $155,600 Australia
95,000 gls, $21,000, British West Africa
192,100 gls, $51,732, British South Africa
571,340 gls, $143,535, France
3,492,195 gls, $885,961, England
570 gls, $184, Argentine
30,875 gls, $9,363, Uruguay
96,040 gls, $23,434, British South Africa
165,500 gls, $27,719, British South Africa
146,400 gls, $30,500, Australia
74,755 gls, $19,033, British South Africa

PHILADELPHIA.

Str Sunik, Thameshaven, 2,155,680 gls gasoline
Str Honduras, Santa Marta, 1,900 gls gasoline
Str Cheyenne, Belfast, 2,019,165 gls ref
Str Matricine, Gibraltar, 1,751,265 gls ref
Bark Trio, Dublin, 534,885 gls ref

Total for week:—Refined, 4,305,265 gls; gasoline, 2,157,580 gls.

BOSTON.

Sept. 16.
Br sch Mercedes, Clementsport, N S, 10,355 gls
Sept. 22.
Br str Prince Arthur, Yarmouth, N S, 1,000 gls
Sept. 23.
Amer str Halifax, Halifax, N S, 200 gls
Total for week:—Refined, 11,555 gls.

NEW ORLEANS.

Sept. 21.
Str Platura, Savona, 1,544,050 gls ref

Sept. 25.
Str Capella I, London, 6,972 bbls ref
Str Capella I, London, 1,303,930 gls fuel oil

Sept. 24.
Str Westwego, Barrow, 2,307,720 gls naphtha
Total for week:—Refined, 1,892,650 gls; naphtha, 2,307,720 gls; fuel oil, 1,303,930 gls.

SAN FRANCISCO.

Sept. 8.
Am str Ventura, Sydney, 16,542 bbls, 694,765 gls crude
Am str Ventura, Pago Pago, 322 cs ref
Am str Ventura, Townsville, 100 cs ref

Sept. 12.
Am str Lurline, Honolulu, 5,000 bbls, 210,000 gls crude 18 dms, 900 gls fuel

Sept. 8.
Am ship Golden Gate, Auckland, 12,611 cs, 121,065 gls benzine, 12,000 cs ref, 8,000 cs distillate
Am ship Golden Gate, Wellington, 5,000 cs motor spirits, 12,000 cs ref, 3,000 cs distillate, 15,000 cs benzine
Am ship Golden Gate, Melbourne, 17,000 cs gasoline, 3,000 cs naphtha

Sept. 6.
Peruvian motor vessel Terzo Italia, Callao, 37 dms, 4,070 gls crude

Sept. 18.
Am str Hyades, Honolulu, 460 dms, 32,640 gls gasoline
Am str Hyades, Port Allen, 289 dms, 20,555 gls gasoline, 268 dms, 27,680 gls distillate
Am str Hyades, Honolulu, 50 dms, 4,500 gls distillate, 20 dms, 2,115 gls gasoline

Total for week:—Crude, 908,825 gls; refined, 244,220 gls; naphtha, 30,000 gls; gasoline, 275,310 gls; benzine, 271,065 gls; fuel oil, 990 gls; distillate, 142,180 gls.

EXPORTS OF PETROLEUM.

The following are the exports of petroleum products from the port of New York, in gallons, for the week and since January 1, 1915. Details of comparisons for last year cannot be given on account of the change in the official methods of compiling the statistics. Totals for countries are now given instead of different ports, as formerly:—

Illuminating.

	For week, gallons.	Since January 1, 1915, gallons.
Aden	.....	390,770
Africa, East British	.....	4,500
Africa, French	.....	1,471,520
Africa, Portuguese	103,800	1,487,470
Africa, South British	443,830	4,500,855
Africa, West British	277,940	3,520,750
Africa, West	.....	95,000
Australia	1,433,430	9,715,580
Argentine	211,685	6,415,635
Azores	.....	20,200
Barbadoes	.....	245,000
Bermuda	21,795	245,640
Bolivia	.....	45,170
Brazil	265,000	20,161,855
British West Indies	.....	204,875
British Guiana	.....	379,335
British West Indies	10,310	412,950
Canada	984,435	2,190,755
Canary Islands	.....	475,810
Chile	.....	5,621,815
China	1,625,130	32,510,125
China, French	.....	1,036,500
Colombia	2,500	654,095
Costa Rica	.....	5,500
Cuba	2,250	294,495
Danish West Indies	.....	28,255
Denmark	.....	909,325
Dutch East Indies	.....	8,811,730
Dutch Guiana	.....	215,000
Dutch West Indies	200	165,495
Ecuador	5,000	340,750
Egypt	.....	6,115,120
England	3,644,905	92,717,155
France	4,580,815	51,425,105
French Guiana	.....	178,080
French West Indies	45,000	178,810
Greece	.....	1,413,950
Guatemala	.....	33,255
Hayti	55,160	547,370
Honduras	.....	5,915
Hong Kong	.....	2,887,640
India	1,625,555	22,761,925
Ireland	.....	1,994,615
Italy	.....	8,307,900
Jamaica	.....	453,245
Japan	.....	1,424,390
Liberia	.....	15,850
Madagascar	.....	35,610
Malta	.....	1,402,770
Mexico	.....	2,500
Morocco	.....	573,875
Netherlands	1,694,305	11,639,140
Newfoundland	56,565	991,110
New Zealand	.....	4,295,520
Nicaragua	.....	36,000
Norway	.....	10,193,295
Oceania, French	.....	30,000
Panama	5,000	818,455
Peru	12,000	264,115
Philippine Islands	.....	5,149,910
Portugal	.....	4,962,845
Porto Rico	.....	876,120
Salvador	.....	4,800
San Domingo	.....	531,450
Scotland	.....	141,145
Spain	.....	7,296,505
Straits Settlements	.....	3,431,580
Sweden	.....	1,895,595
Trinidad	.....	670,095
Uruguay	576,000	2,899,995
Venezuela	11,520	884,820
Totals	17,634,190	321,028,160

Totals for the same time last year, beginning January 1, 272,619,005 gallons.

Benzine.

Africa, South British	.....	4,795
Argentine	.....	13,775
Australia	.....	552,200
Bolivia	.....	1,435
Brazil	.....	250
Chile	.....	7,275
Colombia	.....	45
France	.....	581,215
New Zealand	.....	818,400
Norway	.....	219,200
Uruguay	.....	475
Venezuela	.....	1,705
Totals	.....	2,260,830

Crude.

Africa, South British	.....	3,000
Australia	.....	200
British Guiana	.....	610
China	.....	10,000
Colombia	150,000	601,200
Costa Rica	.....	48,000
Cuba	.....	73,500
England	.....	10,100
France	.....	4,652,590
Hayti	.....	5,620
Italy	.....	350
Mexico	.....	5,000
Netherlands	.....	2,756
Norway	.....	3,250
Panama	.....	425
Peru	.....	100
Porto Rico	.....	755
San Domingo	.....	1,680
Spain	.....	492,035
Trinidad	.....	1,490
Totals	150,000	5,912,645

Total for the same time last year, beginning January 1, 7,392,210 gallons.

Distillate.

Bermuda	.....	7,450
Colombia	.....	425
Honduras, British	.....	1,500
Jamaica	.....	14,160
Porto Rico	.....	2,325
San Domingo	.....	140
Venezuela	.....	1,400
Totals	.....	27,400

Fuel and Gas Oils.

Africa, Portuguese	.....	.....	2,500
Africa, South British	.....	.....	73,500
Africa, West British	.....	.....	19,175
Argentine	.....	.....	541,750
Australia	.....	.....	5,000
Barbadoes	.....	.....	2,645
Bermuda	.....	.....	28,010
Brazil	.....	.....	587,170
British Guiana	.....	.....	76,105
British West Indies	.....	.....	6,115
Canary Islands	.....	.....	321,120
Chile	.....	.....	5,615
China	.....	.....	35,900
China, French	.....	.....	12,155
Colombia	.....	.....	60,275
Cuba	.....	5,195	143,865
Danish West Indies	.....	.....	15,245
Dutch Guiana	.....	.....	44,780
Denmark	.....	.....	2,130,155
Dutch West Indies	.....	.....	3,585
England	.....	1,785,825	40,414,815
France	.....	63,330	387,835
French West Indies	.....	5,350	24,890
Hayti	.....	.....	1,700
Ireland	.....	.....	422,765
Jamaica	.....	.....	8,000
Madagascar	.....	.....	15,005
Malta	.....	.....	5,075
Morocco	.....	.....	6,000
Netherlands	.....	.....	1,207,230
Newfoundland	.....	.....	3,480
Norway	.....	.....	1,089,730
Oceania, French	.....	.....	1,825
Porto Rico	.....	.....	39,645
Portugal	.....	.....	104,880
Salvador	.....	.....	500
San Domingo	.....	.....	92,515
Spain	.....	.....	55,700
Sweden	.....	.....	1,891,410
Uruguay	.....	.....	42,195
Venezuela	.....	.....	730
Totals	.....	1,859,700	50,286,215

Total for the same time last year, beginning January 1, 62,705,255 gallons.

Gasoline.

Africa, French	.....	.....	9,500
Africa, Portuguese	.....	.....	6,525
Africa, South British	.....	.....	6,005
Africa, West British	.....	.....	231,625
Argentine	.....	.....	46,795
Australia	.....	.....	151,870
Azores	.....	.....	33,750
Barbadoes	.....	.....	36,300
Bermuda	.....	.....	17,305
Bolivia	.....	.....	5,250
Brazil	.....	37,250	5,465,820
British West Indies	.....	7,500	30,450
British Guiana	.....	.....	47,525
Canada	.....	.....	1,044,120
Chile	.....	1,075	746,595
China	.....	.....	48,800
Colombia	.....	.....	177,880
Cuba	.....	15,245	181,000
Danish West Indies	.....	.....	2,500
Dutch East Indies	.....	.....	465
Dutch Guiana	.....	.....	13,760
Dutch West Indies	.....	.....	31,500
Ecuador	.....	.....	160
England	.....	.....	5,170
France	.....	9,820	57,250
French Guiana	.....	.....	1,445
French West Indies	.....	29,400	69,415
Hayti	.....	.....	3,920
Italy	.....	4,000	18,150
Jamaica	.....	.....	193,905
Madagascar	.....	.....	180,500
Mexico	.....	.....	475
Morocco	.....	.....	133,030
Newfoundland	.....	13,500	64,750
New Zealand	.....	.....	336,000
Norway	.....	.....	682,145
Panama	.....	.....	35,625
Peru	.....	.....	2,025
Porto Rico	.....	.....	1,488,510
Portugal	.....	.....	29,245
Russia	.....	.....	4,505
San Domingo	.....	.....	149,670
Sweden	.....	.....	213,335
Trinidad	.....	.....	14,380
Uruguay	.....	.....	500
Venezuela	.....	.....	421,355
Totals	.....	113,790	12,519,880

Naphtha.

Africa, French	.....	.....	328,100
Africa, Portuguese	.....	.....	726,260
Africa, South British	.....	528,395	2,575,415
Africa, Spanish	.....	.....	4,750
Africa, West British	.....	95,000	223,045
Africa, West Coast	.....	.....	89,300
Argentine	.....	489,755	6,407,145
Australia	.....	819,200	5,358,245
Azores	.....	.....	52,800
Brazil	.....	.....	7,140
British West Indies	.....	.....	11,870
Canary Islands	.....	.....	200,000
Chile	.....	1,900	713,310
China	.....	.....	90,250
Colombia	.....	.....	700
Cuba	.....	.....	112,625
Denmark	.....	.....	294,970
Egypt	.....	.....	214,430
England	.....	3,402,195	31,279,075
France	.....	571,340	24,877,775
French West Indies	.....	.....	335
Greece	.....	.....	454,020
Hayti	.....	.....	1,134,240
Italy	.....	.....	4,419,020
Japan	.....	.....	142,500
Madagascar	.....	.....	26,800
Mexico	.....	.....	475
Malta	.....	.....	14,250
Morocco	.....	.....	171,715
Netherlands	.....	.....	157,685
New Zealand	.....	.....	1,420,860
Norway	.....	.....	657,900
Peru	.....	.....	95
Portugal	.....	.....	880,525
Philippine Islands	.....	.....	343,120
Spain	.....	.....	4,200
Straits Settlements	.....	.....	61,350
Trinidad	.....	.....	2,200
Uruguay	.....	50,875	847,195
Venezuela	.....	.....	30,085
Totals	.....	6,028,660	84,648,160

The following total includes exports of gasoline, naphtha and benzine for same period, beginning January 1, 1915, 101,674,265 gallons.

Residuum.

Argentine	.....	.....	130,000
Australia	.....	.....	96,000
Brazil	.....	.....	1,170
Chile	.....	.....	1,450
Cuba	.....	.....	19,280
England	.....	.....	160
Jamaica	.....	.....	405
Newfoundland	.....	.....	2,500
Nicaragua	.....	.....	25
Panama	.....	.....	1,380
Philippine Islands	.....	.....	1,090
Trinidad	.....	.....	550
Totals	.....	.....	254,010

EXPORTS—NEW YORK.

(Continued from page 129.)

TURPENTINE—2,750 gls, $1,265, Sweden
50 gls, $31, Costa Rica
100 gls, $68, Salvador
2,010 gls, $1,029, Cuba
25,130 gls, $14,052, Argentine
2,500 gls, $1,315, Brazil
1,080 gls, $575, Peru
960 gls, $509, Uruguay
1,070 gls, $703, Brazil
900 gls, $470, Peru
11,620 gls, $6,177, British South Africa
46 gls, $22, Panama
200 gls, $92, Brazil
100 gls, $54, Colombia
250 gls, $128, Peru
250 gls, $135, Aden
2,880 gls, $1,512, Australia
1,576 gls, $875, British South Africa
300 gls, $227, Portuguese Africa
VARNISH—2,050 gls, $2,590, England
30 gls, $101, Guatemala
24 gls, $38, Salvador
28 gls, $468, Newfoundland
138 gls, $197, Cuba
1,446 gls, $1,834, Argentine
240 gls, $499, Peru
200 gls, $300, Uruguay
1,235 gls, $763, France
102 gls, $133, Norway
5,807 gls, $1,841, Scotland
20 gls, $14, Costa Rica
54 gls, $37, Jamaica
662 gls, $877, Cuba
697 gls, $988, Argentine
27 gls, $12, Ecuador
60 gls, $93, Chile
759 gls, $1,033, Philippine Islands
950 gls, $728, Panama
116 gls, $202, British West Indies
21 gls, $61, British South Africa
WASHING POWDER—14,000 lbs, $372, Cuba
WAX, BEES—3,200 lbs, Straits Settlements
29,300 lbs, $9,709, Russia in Asia
PARAFFINE—736,337 lbs, $25,772, Italy
1,154,892 lbs, $40,430, Spain
26,255 lbs, $1,722, Honduras
4,250 lbs, $229, Cuba
11,440 lbs, $1,006, Argentine
2,480 lbs, $130, Colombia
6,030 lbs, $403, Ecuador
8,355 lbs, $421, Australia
581,720 lbs, $19,898, British South Africa
26,485 lbs, $893, England
76,038 lbs, $4,515, France
642,000 lbs, $28,833, Spain
562,105 lbs, $29,950, England
84,420 lbs, $4,505, Scotland
25,000 lbs, $1,899, Costa Rica
1,350 lbs, $105, Ecuador
8,060 lbs, $571, Peru
677,326 lbs, $9,514, England
26,450 lbs, $1,323, Scotland
3,195 lbs, $219, Honduras
4,500 lbs, $383, Colombia
5,000 lbs, $435, Venezuela
18,016 lbs, $800, Russia in Asia
20,242 lbs, $1,499, Philippine Islands
281,580 lbs, $9,667, British South Africa
375,645 lbs, $12,750, Portuguese Africa
34,282 lbs, $1,071, Cuba
66,880 lbs, $4,552, Azores
22,440 lbs, $1,466, Chile
277,280 lbs, $12,997, British South Africa
37,500 lbs, $1,260, England
169,375 lbs, $8,522, Chile
414,995 lbs, $14,175, British South Africa
WHITE LEAD—167,965 lbs, $13,857, England
2,860 lbs, $291, British South Africa
110,835 lbs, $9,421, Russia in Europe
22,610 lbs, $1,865, England
146,015 lbs, $12,046, Scotland
55,760 lbs, $4,600, England
3,210 lbs, $282, Cuba
2,250 lbs, $229, Ecuador
47,975 lbs, $4,632, France
ZINC, OXIDE—4,710 lbs, $623, Cuba
WHITE—$180, Nicaragua—$200, Panama
$1,543, Cuba—$340, Colombia

BOSTON EXPORTS.

ALCOHOL—29 bbls, Halifax, Halifax
GRAIN—140 bbls, Portlac, Manchester
SOLIDIFIED—3 cs, Halifax, Halifax
CANDLES—29 cs, Halifax, Halifax
CREAM TARTAR—3 bbls, Prince George, Yarmouth, N S
DISINFECTANT—5 cs, Halifax, Halifax
GLUE—5 pkgs, 1 bbl, Halifax, Halifax
GREASE, LUBRICATING—6 bxs, Halifax, N S
OIL CAKE—1,275 bgs, Foyle, Liverpool
LUBRICATING—25 pkgs, 150 gls, Halifax, Halifax
MEAL—11,200 bgs, Foyle, Liverpool
800 bgs, Prince George, Yarmouth, N S
1,200 bgs, Prince Arthur, Yarmouth, N S
PLUMBAGO—3 pkgs, Halifax, Halifax
POTATO FLOUR—16 cs, Halifax, Halifax
QUEBRACHO EXT—21 bbls, Halifax, Halifax
SANDPAPER—18 cs, Tansan Maru, Manchester
2 crts, Halifax, Halifax
SOAP—7 pkgs, Prince George, Yarmouth, N S
1 crt, 2 cs, Halifax, Halifax
SODIUM, SULPHIDE—52 bbls, Tansan Maru, Manchester
STAIN—2 pkgs, Prince George, Yarmouth, N S
STARCH—40,200 lbs, Tansan Maru, Manchester
TALCUM POWDER—1 cs, Halifax, Halifax
TANKAGE—765 bgs, Effie Maud, Windsor, N S
TURPENTINE—3 bbls, Halifax, Halifax
WASHING POWDER—8 cs, Halifax, Halifax

BALTIMORE EXPORTS.

ACETONE—175 dms, 150,000 lbs, Rowanmore, Liverpool
AMMONIA, ANHYDROUS—300 cylinders, 27,384 lbs, Rowanmore, Liverpool
BORATE ROCK—2,400 sks, 244,000 lbs, Rowanmore, Liverpool
COLOGNE—190 cs, Rowanmore, Liverpool
EXTRACT CHESTNUT—765 bbls, 391,793 lbs, Rowanmore, Liverpool
DYEWOOD—60 bbls, 28,207 lbs, Rowanmore, Liverpool
HEMLOCK—383 bbls, 215,333 lbs, Rowanmore, Liverpool
QUERCITRON—6 bbls, 3 lbs, Rowanmore, Liverpool
TANNING, DRY—1,484 hgs, 219,464 lbs, Rowanmore, Liverpool
OIL, LUBRICATING—765 bbls, 36,985 gls, Rowanmore, Liverpool
260 bbls, 13,044 gls, Rowanmore, Liverpool
MINERAL, LUBRICATING—135 bbls, 6,641 gls, Rowanmore, Liverpool
OIL CAKE, LINSEED—1,284 bgs, 443,550 lbs, Rowanmore, Liverpool
OYSTER SHELLS—900 bgs, 600 tons, Rowanmore, Liverpool
GRIT—1,200 bags, 134,109 lbs, Rowanmore, Liverpool
WAX—868 bbls, 294,310 lbs, Rowanmore, Liverpool
70 bbls, 28,500 lbs, Rowanmore, Liverpool
250 bbls, 74,545 lbs, Rowanmore, Liverpool
PETROLEUM—130 bbls, 32,489 lbs, Rowanmore, Liverpool
PARAFFINE—382 bbls, 81,390 lbs, Rowanmore, Liverpool

PHILADELPHIA EXPORTS.

ACETONE—695 dms, Haverford, Liverpool
82 dms, Mackinaw, London
ALCOHOL—116 dms, Rossano, London
WOOD—441 dms, Rossano, London
ASH, SODA—420 bbls, Rossano, London
AMMONIA, PHOSPHATE—104 bbls, Rossano, London
CHEMICALS—22 cs, Mackinaw, London
160 cs, Rossano, London
CRESOLIS—4 pkgs, Mackinaw, London
FORMALDEHYDE—94 bbls, Haverford, Liverpool
GREASE, AXLE—70 bbls, Mackinaw, London
LUB—1,852 lbs, Haverford, Liverpool
MIN—300 bbls, Haverford, Liverpool
215 bbls, Rossano, London
PET—2,031 bbls, Admiralen, Liverpool
65 bbls, Mackinaw, London
LEAD, DRY WHITE—25 bbls, Mackinaw, London
OIL, COTTONSEED—2,510 bbls, Sloterdyk, Rotterdam
ESSENTIAL—2 dms, Mackinaw, London
LUB—154,942 gls, Kasbek, St Louis du Rhone
166,150 gls, Admiralen, Liverpool
9,078 bbls, Fido, Havre
87,045 gls, Sloterdyk, Rotterdam
210,156 gls, Haverford, Liverpool
250 bbls, Trio, Dublin
3,563 bbls, Mackinaw, London
1,695,387 gls, Enamuel Nobel, London
130 bbls, Rossano, London
99,619 gls, Rossano, London
MIN COLZA—65 bbls, Rossano, London
OLEO—400 tcs, Mackinaw, London
SPERM—300 bbls, Admiralen, Liverpool
300—11 bbls, Haverford, Liverpool
50 bbls, Mackinaw, London
OILCAKE—2,800 bgs, Sloterdyk, Rotterdam
4,200 bgs, Haverford, Liverpool
LINSEED—633 bgs, Rossano, London
SCALE, PARAFFINE—210 bbls, Haverford, Liverpool
151 bgs, Motricine, Gibraltar F O
SOAPSTONE—1,090 bgs, Mackinaw, London
STARCH—2,640 bgs, Mackinaw, London
WAX, PARAFFINE—316 cs, Haverford, Liverpool
714 pkgs, Mackinaw, London
204 bbls, Rossano, London
WHITE—1,390 bbls, Rossano, London

NEW ORLEANS EXPORTS.

COTTONSEED CAKE—17,282 sks, Lilly, Gothenburg
MEAL—1,000 sks, Turrialba, Bocas del Toro
OIL, COTTONSEED—100 bbls, Turrialba, Bocas del Toro
200 bbls, Excelsior, Havana
LUBRICATING—300 bbls, Newlands, Glasgow
272 bbls, A E McKinstry, Cuba
WAX, PARAFFINE—230 bgs, Heredia, Bocas del Toro
220 bbls, Newlands, Glasgow

GALVESTON EXPORTS.

COTTONSEED CAKE—8,339 sks, Norman, Korsoer
27,737 sks, Vladim'r Reitz, Frederikshavn
MEAL—4,572 sks, Veraston, Liverpool
SPELTER—11,284 plates, Indian, Liverpool
6,472 plates, Veraston, Liverpool
9,246 plates, Veraston, Liverpool

SEATTLE EXPORTS.

AMMONIA, AQUA—1 dm, 775 lbs, $57, Pr Charlotte, Vancouver
BONES—57 sks, 6,950 lbs, $151, Inaba Maru, Kobe
CASTOR OIL—2 cs, 100 lbs, $16, Kamakura Maru, Shanghai
CHLORIDE, CALCIUM—2 dms, 1,143 lbs, $15, Pr Adelaide, Vancouver
GASOLINE—13,643 gls, $2,315, Oil Trans No 1, Victoria
GOLD, LIQUID—2 cs, 5,300 grs, $510, Inaba Maru, Yokohama
GREASE, INEDIBLE—200 tcs, 75,178 lbs, $6,296, Yesan Maru, Vladivostok
2 bbls, 690 gls, $31, Oil Trans No 1, Victoria
7 bbls, 1,638 lbs $115, Wakena, Victoria
MILK SUGAR—10 kgs, 1,250 lbs, $291, Kamakura Maru, Shanghai
MORPHINE, APPLICATION—1 cs, 800 ozs, $1,480, Kamakura Maru, Kobe
NAPHTHALENE BALLS—2 bbls, 539 lbs, $89, Kamakura Maru, Shanghai
NITRATE—5 cs, 1,353 lbs, Inaba Maru, Yokohama
OIL, ARISTO—3 bbls, 147 gls, $42, Pr Victoria, Victoria
CYLINDER—4 bbls, 195 lbs, $74, Oil Trans No 1, Victoria
ENGINE—6 bbls, 290 gls, $42, Pr Victoria, Victoria
FUEL—800 bbls, 28,000 gls, $648, Union Oil No 1, Victoria
1,700 bbls, 59,500 gls, $1,300, Union Oil No 1, Victoria
LUBRICATING—5 bbls, 307 gls, $65, Pr Adelaide, Vancouver
15 bbls, 750 gls, $158, Pr Adelaide, Vancouver
14 bbls, 692 gls, $145, Pr Adelaide, Vancouver
NEATSFOOT—1 cs, 45 gls, $5, Kamakura Maru, Shanghai
MACHINERY—6 bbls, 300 gls, $54, Pr Victoria, Victoria
6 bbls, 290 gls, $63, Pr Victoria, Victoria
ROSIN—150 bbls, 72,630 lbs, $1,500, Inaba Maru, Yokohama
500 bbls, 199,564 lbs, $5,729, Yesan Maru, Vladivostok
200 bbls, 80,000 lbs, $2,580, Yesan Maru, Vladivostok
SALOL—11 kgs, 1,100 lbs, $5,500, Yesan Maru, Vladivostok
TALLOW—165 tcs, 59,833 lbs, $5,310, Crown of Toledo, Liverpool
250 bbls, 93,840 lbs, $10,000, Yesan Maru, Vladivostok

TACOMA EXPORTS.

ACID, CITRIC—21 kgs, 3,160 lbs, $1,920, Kamakura Maru, Kobe
GRAPHITE—10 bbls, 4,622 lbs, $300, Kamakura Maru, Yokohama
LOGWOOD—50 bdls, 5,850 lbs, $2,500, Kamakura Maru, Yokohama or Kobe
PAINT, PASTE—6 cs, 875 lbs, $128, Kamakura Maru, Shanghai
150 cs, 10,790 lbs, $1,523, Kamakura Maru, Kobe
WALL FINISH, DRY—155 bxs, 4,340 lbs, $160, Kamakura Maru, Tientsin
WAX, PARAFFINE—1,600 bgs, 349,793 lbs, $12,000, Kamakura Maru, Shanghai

SAN FRANCISCO EXPORTS.

ACID, BORACIC—63 bbls, 17,289 lbs, Nippon Maru, Shanghai
MURIATIC—2 cs, 50 lbs, Hyades, Honolulu
SULPHURIC—22 dms, 34,199 lbs, Colusa, Callao
2 dms, 3,520 lbs, Centralia, La Paz
BORAX—55 cs, 18,008 lbs, Nippon Maru, Shanghai
CANDLES—10 cs, 200 lbs, Lurline, Kahului
55 cs, 1,810 lbs, Centralia, La Paz
20 bdls, 1,500 lbs, Jim Butler, Santa Rosalia

CARBON BISULPHIDE—15 cs, 750 lbs, Hyades, Honolulu
COLORS, DRY—15 cs, 200 lbs, Ventura, Sydney
3 cs, 200 lbs, Lurline, Honolulu
DRUGS—11 cs, 165 lbs, Ventura, Sydney
GREASE, LUB—60 cs, 4,050 lbs, Lurline, Kahului
5 cs, 200 lbs, Centralia, Guaymas
GRAPHITE—23 bbls, 9,200 lbs, Nippon Maru, Yokohama
LEAD, WHITE—150 kegs, 7,500 lbs, Ventura, Melbourne
50 dms, 5,000 lbs, Ventura, Pago Pago
15 kegs, 1,500 lbs, Ventura, Wailuku
2 kegs, 110 lbs, Jim Butler, Santa Rosalia
RED—2 kegs, 110 lbs, Lurline, Honolulu
OILS, LINSEED—67 bbls, 3,685 gls, Lurline, Honolulu
70 cs, 700 gls, Lurline, Kahului
40 bbls, 2,000 gls, Terza Italia, Callao
5 cs, 50 gls, San Pedro, Topolobampo, Mexico
2 dms, 185 gls, Centralia, Guaymas, Mexico
LUB.—660 cs, 4,000 gls, Ventura, Sydney
850 bbls, 42,500 gls, Ventura, Sydney
5 bbls, 250 gls, Lurline, Wailuku
330 bbls, 7,022 gls, Lurline Kahului
575 bbls, 14,742 gls, Lurline, Honolulu
81 cs, 810 gls, Hyades, Mahukona
PAINT—5 cs, 315 gls, Ventura, Brisbane
5 cs, 315 gls, Ventura, Townsville
7 cs, 70 gls, Ventura, Rockhampton
20 kegs, 700 gls, Ventura, Apia
54 cs, 678 gls, Lurline, Honolulu
63 cs, 650 gls, Lurline, Wailuku
2cs, 89 gls, Lurline, Kahului
100 cs, 1,250 gls, Terza Italia, Callao
4 bbls, 209 gls, San Pedro, Topolobampo, Mexico
PETROLATUM—21 cs, 210 gls, Lurline, Honolulu
SOAP—3 cs, 205 lbs, Lurline, Honolulu
960 cs, 72,000 lbs, Lurline, Mahukona
27 cs, 1,570 lbs, Nippon Maru, Hong Kong
4 cs, 264 lbs, Hyades, Honolulu
2 cs, 120 lbs, Centralia, La Paz, Mexico
350 cs, 31,500 lbs, Jim Butler, Santa Rosalia
SOAD, BICARBONATE—2 kegs, 224 lbs, Nippon Maru, Shanghai
CAUSTIC—5 kegs, 560 lbs, Lurline, Kahului
2 dms, 2,025 lbs, San Pedro, Mazatlan
6 dms, 4,559 lbs, San Pedro, Topolobampo
NITRATE—203 bbls, 89,409 lbs, Nippon Maru, Shanghai
SAL—8 cs, 1,060 lbs, Ventura, Sydney
SODIUM, SULPHATE—3 dms, 2,241 lbs, Centralia, La Paz
SULPHATE OF AMMONIA—19,315 sks, 2,664,190 lbs, Hyades, Honolulu
SULPHUR—31 sks, 110 lbs, Centralia, Guaymas
TALLOW—435 bbls, 175,462 lbs, Stanley Dollar, Vladivostok
400 cs, 24,000 lbs, Colusa, Callao
TURPENTINE—101 cs, 110 gls, Lurline, Honolulu
5 cs, 50 gls, San Pedro, Topolobampo
WAX—172 cs, 39,592 lbs, Nippon Maru, Shanghai
ZINC, WHITE—20 kegs, 700 lbs, Ventura, Townsville

CHARTERS.

Following is a list of the vessels chartered at principal ports during the past week to convey products to or from American ports:—

LINSEED.—Dan str Nordvalen, 2,121 tons (previously) from Rosario to New York, $18, Sept
SULPHUR.—Str Honolulan, 4,421 tons, from Sabine to Marseilles, at or about $30, Oct

BERTH QUOTATIONS.

	Liverpool.	London.	Glasgow.
Oilcake, per ton.....	60c	70c	70c
Lard, tcs, per ton.....	125c	125c	125c
Tallow, per ton.....	125c	125c	125c
	Manchester.	Antwerp.	R'dam.
Oilcake, per ton.....	60c	160c	175c
Lard, tcs, per ton.....	125c	250c	200c
Tallow, per ton.....	125c	250c	200c
	Bristol.	Havre.	Hull.
Oilcake, per ton.....	75c	125c	75c
Lard, tcs, per ton.....	125c	275c	125c
Tallow, per ton.....	125c	275c	125c

SHIPMENTS TO NEW YORK FROM POINTS IN THE UNITED STATES.

Week ending Sept. 29.

ALCOHOL—2,800 bbls, order, B & O R R
85 bbls, Preston Co, H R R R
93 bbls, G M Dickerson, H R R R
700 bbls, export, B & O R R
WOOD—160 bbls, W S Gray & Co, D, L & W R R
BARK EXTRACT—563 bbls, order, O D S S L
BONE BLACK—294 sks, order, Galveston
CAMPHOR, REFINED—175 bxs, L C Hopkins & Co, P R R
25 cs, order, P R R
CLAY—2,939 sks, order, Jacksonville
1,508 sks, order, Galveston
1,183 sks, order, Savannah S S L
4 cars, order, Savannah S S L
COAL TAR DYES—127 bbls, order, O D S S L
COLOGNE SPIRITS—70 bbls, Union Distg Co, D, L & W R R
CORN SYRUP—100 bbls, Benham & Noyes, D, L & W R R
FLAXSEED—1 car, order, L V R R
FULLER'S EARTH—3,338 sks, order, Tampa
GLUE, DRY—143 bbls, U S Glue Co, D, L & W R R
1 car, S Isaacs & Co, B & O R R
STOCK—67 bbls, order, Jacksonville
GLYCERINE, CRUDE—33 dms, order, O D S S L
30 dms, order, Savannah S S L
GREASE—5 cars, order, J C R R
70 bbls, Warren Lub Co, D, L & W R R
6 bbls, order, B & O R R
100 bbls, Welch, Holme & Clark Co, P R R
GUM, CRUDE—150 bxs, T M Duche & Sons, P R R
LEAD—12,520 pigs, order, Galveston
3,520 pigs, order, New Orleans
MENTHOL, CRYSTALS—25 bxs, order, P R R
MUSTARD SEED—273 sks, order, Galveston
OCHER—265 bbls, order, Savannah S S L
OIL CAKE—1,353 sks, order, D, L & W R R
252 sks, American Linseed Co, H R R R
3,340 sks, export, L V R R
1,965 sks, export, D, L & W R R
CHINA WOOD—126 bbls, A Klipstein & Co, P R R
COCOANUT—1 car, order, J C R R
79 bbls, Mitsui & Co, H R R R
158 bbls, Manhattan Soap Co, H R R R
COOKING—2,050 cs, order, Savannah S S L
CORN—65 bbls, Welch, Holme & Clark Co, B & O R R
COTTONSEED—60 bbls order, Jacksonville
9 tank cars, order, E R R
1,200 bbls, order, New Orleans
100 bbls, order, O D S S L
300 bbls, export, O D S S L
FISH—574 bbls, order, Wilmington
LARD—100 bbls, Standard Oil Co, B & O R R
75 bbls, Clarkson & Ford Co, B & O R R
LINSEED—2 bbls, order, Jacksonville
LUBRICATING—2 cars, order, J C R R
195 bbls, Cook & Cokefair, P R R
2 cars, order, D, L & W R R
121 bbls, order, D, L & W R R
72 dms, L Sonneborn & Sons, B & O R R
10 dms, order, B & O R R
75 bbls, Lunham & Moore, B & O R R
NEATSFOOT—75 bbls, order, New Orleans
OLEO—125 tcs, order, B & O R R
70 tcs, export, D, L & W R R
105 tcs, order, L V R R
1 car, order, J C R R
PETROLEUM—85 bbls, Pearson Eng Co, D, L & W R R
PINE—350 bbls, order, Jacksonville
ROSIN—241 bbls, order, Savannah S S L
2 bbls, order, Mobile
SOYA BEAN—1 car, Marden, Orth & Hastings, B & O R R
TAR—15 bbls, order, Wilmington
360 bbls, order, Jacksonville
OLEO STOCK—30 tcs, order, D, L & W R R
50 tcs, order, B & O R R
PITCH—155 bbls, order, Savannah S S L
12 bbls, order, Wilmington
100 bbls, order, New Orleans
POTASH—221 sks, order, Charleston
ROSIN—2,352 bbls, order, Jacksonville
1,223 bbls, order, Savannah S S L
176 bbls, order, Wilmington
64 bbls, order, O D S S L
1,925 bbls, order, New Orleans
100 bbls, order, Charleston
2,000 bbls, order, Brunswick
981 bbls, order, Mobile
SIZE—10 bbls, order, Savannah S S L
SOAP STOCK—200 bbls, order, Savannah S S L
SODA, ASH—3 cars, order, O D S S L
1,750 sks, order, O D S S L
664 bbls, order, O D S S L
35 bbls, Portola Mfg Co, P R R
4 cars, Clinchfield Bros Co, B & O R R
240 bbls, export, O D S S L
162 bbls, H Cohnstamm Co, D L & W R R
CAUSTIC—55 dms, order, B & O R R
55 dms, E Hill's Son & Co, D L & W R R
SILICATE—237 sks, E J Drew & Co, D L & W R R
SPELTER—1,971 slabs, Metal Trading Co, B & O R R
5,695 slabs, Grasselli Chemical Co, B & O R R
863 slabs, Clendennin Bros, B & O R R
SPIRITS—1,422 bbls, order, New Orleans
100 bl bbls, order, New Orleans
80 bbls, S S Kraus & Co, H R R R
SPONGES—101 bls, order, Jacksonville
74 bls, order, Tampa
38 bls, order, Key West
23 bls, A Isaacs & Co, Jacksonville
SPONGES—27 bls, Lasker & Bernstein, Jacksonville
62 bls, Lasker & Bernstein, Tampa
12 bls, Lasker & Bernstein, Key West
STARCH—430 sks, order, B & O R R
1 car, order, J C R R
TALLOW—65 tcs, H N Calef, H R R R
75 tcs, Vandechove & Co, B & O R R
TANNING EXTRACT—1,080 sks, Haley-Hammond Co, B & O R R
TAR—60 bbls, order, Savannah S S L
264 bbls, order, Wilmington
160 bbls, order, New Orleans
502 bbls, order, Jacksonville
TURPENTINE—1,064 bbls, order, Jacksonville
47 bbls, order, Wilmington
725 bbls, order, New Orleans
143 bbls, order, Mobile
CRUDE—25 bbls, order, Wilmington
5 bbls, order, Mobile
WAX, PARAFFINE—1,352 bbls, export, New Orleans
330 sks, Lunham & Moore, P R R
126 bbls, J C Francesconi & Co, P R R
750 sks, D C Andrews, P R R
757 sks, order, Galveston
500 sks, Kuh & Valk Co, P R R
105 bbls, order, New Orleans
157 sks, J C Francesconi & Co, P R R

No Change in Color Shown by Year Tests of Glass Rosin Types.

Washington, Sept. 29, 1916.

It has come to the attention of the Department of Agriculture that permanency of the color of the glass for rosin types is questioned, states C. Frank Sammet, acting chemist in charge, leather and paper laboratory, Bureau of Chemistry.

"As previously stated by the department, the permanency of the color of the glass was given considerable attention before the types were issued," says Mr. Sammet.

"Repeated experiments have shown that after exposures of over a year, subjecting the glass to the action of the direct sunlight and atmospheric conditions, there was no perceptible change in color. From this it is apparent that if the types are used in accordance with the procedure for grading rosin recommended by the Bureau of Chemistry, there will be no change in color. They are more likely to be rendered useless by physical destruction than because of change in color, but even this feature has been minimized in the special construction of the types."

Chemical Laboratory Feature of New $1,500,000 Naval Laboratory.

Washington, Sept. 29, 1916.

The sub-committee of the Naval Civilian Consulting Board, which was appointed to recommend to the Secretary of the Navy a site for the authorized $1,500,000 naval experimental laboratory, is considering the nature of the proposed structure as well as its location.

A naval officer, who is in close touch with the board, today said that a large part of the proposed laboratory building will be devoted to a chemical laboratory. He pointed out that many of the subjects to be taken up will necessitate the use of a chemical laboratory.

For example, he enumerated the following problems, which will be studied by the board when the laboratory has been built.

The quality of steel castings and forgings, the strength of various metals, new alloys for special structural purposes, the effect of salt-water erosion on metals. These are but a few of the studies, he said, which will require chemical analysis and treatment.

The Navy Department and the Naval Board have received dozens of requests from various municipalities asking that the laboratory be established in their respective locality. Most of the applications were from along the Atlantic seaboard, though there were few from the Lake States and between the Allephanies and the Mississippi. The sub-committee of the board will visit most of the places bidding for the plant, before rendering a decision on the site.

Among the features which will be considered in determining the site, the naval officer said, are deep water, good railroad facilities, a supply of expert, skilled labor, the nearness of naval experts, climate and availability of supplies.

For Sale

Any of the following
STEAMERS

Amagansett
Tonnage D.W. about 400. 700 I.H.P. Built 1912

William B. Murray
Tonnage D.W. about 400. 700 I.H.P. Built 1912

Herbert N. Edwards
Tonnage D.W. about 350. 600 I.H.P. Built 1911

Rollin E. Mason
Tonnage D.W. about 350. 600 I.H.P. Built 1911

Martin J. Marran
Tonnage D.W. about 350. 600 I.H.P. Built 1911

and other steamers

ALSO

Water Front Property

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Solvay Process Co. and Pacific Coast Borax Co. Unite in Obtaining Much-Sought Mineral from Searles Lake

1,000 TONS A MONTH OUTPUT TO BE PRODUCED BY JAN. 1.

Following an experimental period of four years, during which chemists of the Solvay Process Company and the Pacific Coast Borax Company have been endeavoring to work out a process to recover the potash from the brines of Searles Lake, it is announced that the experimental stage has been passed and the industry is about to be established on a commercial basis.

The machinery is now being installed for the first unit, which contemplates the production of one thousand tons a month, and additional units will be added as demand warrants.

Following laboratory experiments, four carloads of brine were shipped to the plant of the Pacific Coast Borax Company at Alameda, and this test proved the commercial success of the process, the potash produced testing 85@90 per cent. KCl.

The operation of the plant will be in charge of the experts of the Solvay Process Company, while the sales end of the business will be in charge of the Pacific Coast Borax Company, 100 William street, New York.

C. B. Zabriskie, vice-president and general manager of the latter company, stated to a representative of the Reporter last week that his company expected to be able to make a delivery of potash by January 1, 1917, and that the process was such that, under even normal conditions, the plant could be operated at a low cost.

Cuban Potash Discovery Taken Immediate Advantage of by Orgnizers.

Following the report of the discovery of high-grade potash fields, some thousands of acres in extent, near Matanzas, Cuba, the Reporter through its Washington representative appealed to the Department of Commerce to cable the American Consul-General at Havana for confirmation of the report, which if true, was of more than ordinary importance to the American fertilizer and potash interests. No repiy was received up till the time of going to press last week, but subsequently we received the following dispatch from Washington:—

"Consul-General Rodgers at Havana cables that the best information obtainable there indicates that the report as to the discovery of potash is not well founded. He will investigate further."

Since that time the daily papers, which devoted columns of space to the discovery and to comments upon its possible advantages to this country, in view of the nation-wide search for potash here, have carefully neglected to carry further reports.

While there is undoubtedly potash of some description in Cuba, and possibly in sufficient quantity and of a quality which will render it of great value to such a consuming country as the United States and make it an important factor in this market, definite information as to this new "discovery" is still lacking. Almost before the wires with the first optimistic reports were cold, however, announcement was made of the incorporation of a new $5,000,000 company to exploit these fields, with the statement that options had been secured on 4,800 acres of potash land. Application for the listing of shares on established exchanges was announced as the next move, although no investigation of the land had been made at the time this report was made public.

Prof. Parsons Will Study Nitrate Plants Abroad Prior to Establishment Here.

Washington, Sept. 29, 1916.

Prof. Charles L. Parsons, of the Bureau of Mines, will sail October 5, to make an extensive study abroad, preliminary to the establishment of the government's $20,000,000 nitrate plant. Prof. Parsons, who is the chief of the division of mineral technology and an eminent scientist, will visit England, France, Sweden, Norway and Italy.

He will pay particular attention to the successful Norwegian methods of extracting nitrogen from the air by means of electrolysis. The location of the United States plant will depend largely on the report submitted by Prof. Parsons.

Bureau of Soils Investigating Potash Production by Cement Factories.

Washington, Sept. 29, 1916.

Interesting experiments for the production of potash from cement factories have been undertaken recently by the Bureau of Soils of the Department of Agriculture. It has been discovered that by using a Cottrell precipitator in connection with the cement kilns, a precipitator of potash not soluble can be obtained. Several cement plants are now obtaining potash in this way.

In consequence, samples have been obtained by the Bureau of Soils from all the chief cement mills in this country and Canada. These samples are of the raw materials and finished products. It is the purpose of the Bureau of Mines to ascertain from experiments with these samples whether potash in considerable quantities can be obtained through the use of the Cottrell precipitator.

Coal and feldspar rock, which are burned with lime in the kilns for the production of cement, are known to contain potash, but in insoluble form. This potash, however, on being passed through the furnace, becomes soluble, and is so when precipitated by the Cottrell precipitator.

The great need of discovering some means of providing an adequate supply of potash for fertilizers in this country has been demonstrated since the opening of the European war and the cutting off of the supply of potash from Germany. This is the reason of the intercst of the Bureau of Soils in the matter. At present cement plants at Duluth, Buffalo, Hagerstown, Maryland, and the Riverside Portland Cement Company are obtaining potash from their flue dust by the use of precipitators. It is reported that the potash so obtained is in very appreciable quantities.

The Bureau of Soils also intends to investigate the possibility of obtaining potash by similar means in blast furnaces which use ore containing potash, in insoluble form. It is said that one blast furnace at South Bethlehem, Pa., has already been installed for this purpose, and appears to have met with success.

Reparation of Overcharges in Interstate Freight Traffic Ordered.

Washington, Sept. 29, 1916.

Reparation for overcharges by interstate railway carriers has been ordered by the Interstate Commerce Commission in the following cases:—

Standard Oil Company v. Atlantic Coast Line Railway Company, $1,000.36 collected on 14 tank carloads of refined petroleum from Wilmington, N. C., to Gastonia, N. C., January 5, 1914, to November 5, 1914.

Roessler & Hasslacher Chemical Company v. Atchison, Topeka and Santa Fe Railway Company, $684.96 on six carloads of cyanide of sodium from Perth Amboy, N. J., to Los Angeles, Cal., October 24 to November 10, 1914.

Standard Oil Company v. Southern Railway Company, $14 on one tank car of gasoline from Charleston, Texas, to Corinth, Miss., June 12, 1914.

Rub-No-More Company v. Wabash Railway Company, $62.80 on seven shipments of grease from Detroit, Mich., to Fort Wayne, Ind., March 30 to August 6, 1914.

Southern Cotton Oil Company v. Seaboard Air Line Company, $97.69 on two tank carloads of cottonseed oil from Jacksonville, Fla., to Savannah, Ga., September 8, 1914.

North Carolina Naval Stores Company v. Atlantic Coast Line Railway Company, $1.42 on five barrels of rosin from Wilmington, N. C., to Elwood City, Pa., October 14, 1915.

Trade Commissioner Hurley Indorses House Painters' Overhead Cost Campaign.

Secretary-Treasurer A. H. McGhan, of the International Association of Master House Painters and Decorators, has received through Chairman Hurley, of the Federal Trade Commission, the indorsement of that board of the method as suggested by the Association of applying "overhead costs" by the contract'ng painter. In his reply Commissioner Hurley said:—

As to the distribution of overhead, the basis must necessarily vary with the different trades. Generally speaking, the most reliable basis is the element of direct cost with the minimum of fluctuation. In the contracting painting business this element would be labor, a day being the unit. Dividing the known overhead of a given period by the number of days labor during the period would seem to give the most convenient and reliable basis of distribution. Then to each day's wage would be added the daily overhead rate in order to ascertain the total cost of a day's service.

Exports Pass Half Billion a Month Mark for the First Time.

Washington, Sept. 29, 1916.

American exports have finally passed the half billion a month mark. Statistics issued by the Bureau of Foreign and Domestic Commerce, of the Department of Commerce, show that the exports for August amounted to $510,000,000, which is not only the record for this country, but for all countries. It is $35,000,000 higher than the previous high record, which was established in May, and $45,000,000 higher than the June total.

Imports, on the other hand, showed a decrease for August, the total being $59,247,391. This is a decline of $47,000,000 as compared with June, the record month.

EXPORTS FOR SEVEN MONTHS.

	1915.	1916.
Breadstuffs	$95,979,000	$231,658,000
Chemicals, drugs, dyes	38,800,000	89,623,000
Copper	66,563,000	127,844,000
Cotton, raw	271,153,000	249,471,000
Cotton, manufactured	21,685,000	29,897,000
Iron and steel	174,791,000	442,649,000
Meat and dairy	171,758,000	178,323,000
Woolen goods	20,740,000	50,527,000
Totals	$861,469,000	$1,409,993,000

Press dispatches from Jacksonville, Fla., announce the destruction by fire in that city on September 22 of one of the large buildings of the plant of the Florida Cottonseed Oil Mills, a quantity of cottonseed and five box cars loaded with cottonseed. The loss is estimated at $140,000, fully covered by insurance. The company announces that it will rebuild at once. The origin of the fire is unknown.

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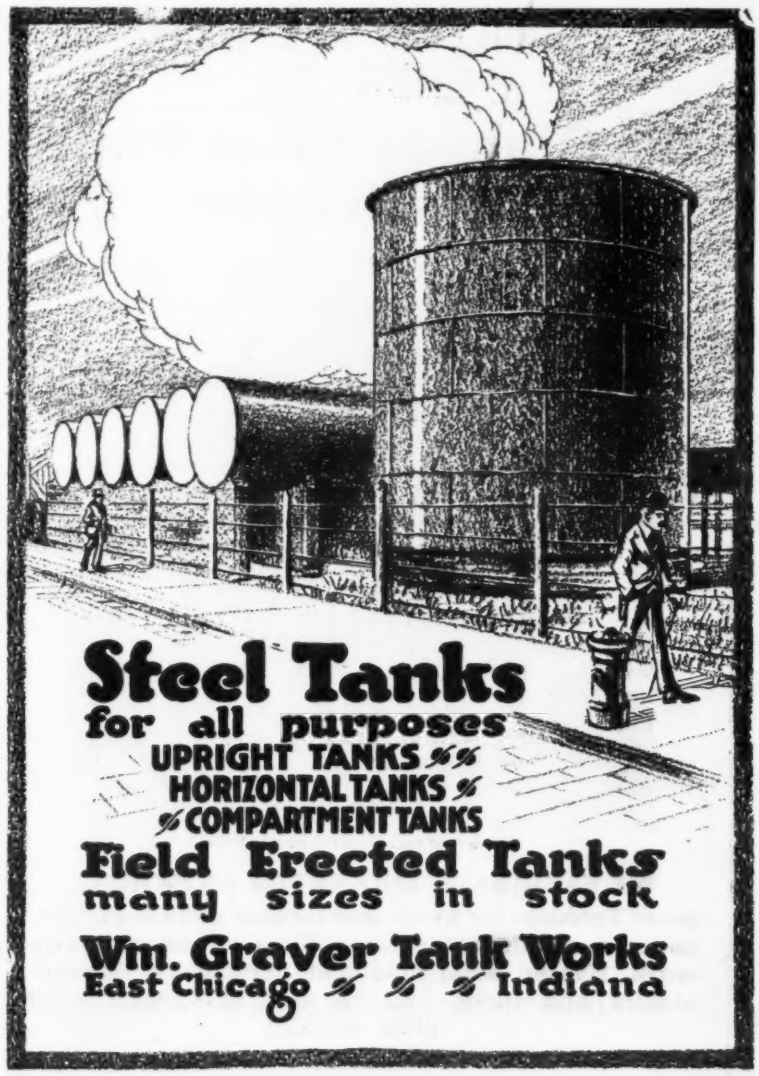

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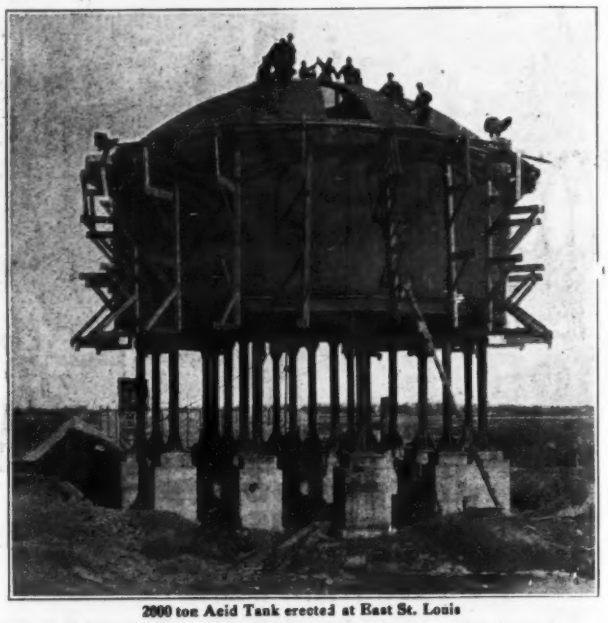

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MOTORISTS SEEKING LAW TO PROHIBIT FRAUDULENT "BLENDING" OF GASOLINE

Chicago, Sept. 28, 1916.

Legislation to prevent fraudulent adulteration of gasoline soon may be enacted by the Chicago City Council as a result of numerous complaints recently made by automobilists concerning the quality of that commodity sold to them in different parts of Chicago and of the State. City and State officials, and officers of automobile clubs are among those to whom the complaints of inferior gasoline have been made. There is no record that a remedy has been offered in any instance.

Alderman Thomas J. Lynch is among those to whom many automobile owners have protested. Owners of machines have told Alderman Lynch of purchasing at the highest market price a product labeled gasoline, but which was found to have been diluted with water or to contain kerosene, naphtha or some other inferior ingredient. He is preparing to introduce an ordinance prohibiting such adulteration.

Mr. Lynch said today he believes the City Council has authority to provide regulations prohibiting blending of inferior ingredients with gasoline, or, at least, easy of detection.

"Analyses of samples of products sold as high grade gasoline showed that they had been blended with naphtha or kerosene, or diluted with water," said Mr. Lynch. "The gasoline handled by the large companies direct from the refineries I found is inspected and classified by the city oil inspector or his assistants before distribution among the retailers.

"I have not found any ordinance or statute to regulate the sale of gasoline in Chicago or the State, but other States have taken the matter in hand. Wisconsin is among the States that have excellent acts for the classification, labeling and storage of gasoline. Chicago, though, seems only to have concerned itself with a measure prescribing the manner in which gasoline shall be stored. I shall prepare an ordinance requiring the classification and proper labeling of the quality of gasoline."

Frank L. Childs, attorney for the Chicago Motor Club, is another to whom automobilists have complained. He expressed his willingness to co-operate in a movement to insure the proper branding of gasoline.

"When one considers the tens of thousands of motor cars and trucks in use in Chicago alone it is readily seen that even a small percentage of fraudulent adulteration of gasoline would be no inconsiderate item," he said. "The man stopping at a station to have his gasoline tank filled has no way of knowing whether the product offered him is of good or poor quality."

Figures showing that adulterated or poor quality gasoline may be costing Chicago automobilists hundreds of thousands of dollars annually have been prepared by A. C. Parker, chairman of the touring and sign-board committees of the Chicago Motor Club. He believes an ordinance of the kind proposed by Alderman Lynch to prohibit fraudulent blending of gasoline and to compel honest certification of the grade of the product offered for sale will save motor owners the greater portion of the money now wasted for inferior fuel.

"Records of the city collector's office show," said Mr. Parker, "that from May 1 to September 25 vehicle tax licenses for 51,478 motor-driven vehicles, exclusive of motorcycles, had been issued in this city. Licenses are still being issued at the rate of about 100 a day. If the daily average gasoline consumption of these 51,478 motor vehicles is estimated at one gallon—and I believe that is conservative—the yearly consumption would amount to 18,789,470 gallons. At an average cost of 20c. a gallon, the yearly bill would be approximately $3,750,000.

"Assuming that the gasoline, through adulteration, fraudulent or otherwise, is only 90 per cent. efficient, it would mean an annual loss of $375,000. Divided among 51,500 motorists, the cost to the individual would only be about $7. The individual loss would seem trifling, but when considered as a whole it is startling.

"By keeping a record of the mileage he gets out of a certain number of gallons with his car in perfect running order, an owner can quickly figure out his weekly, monthly or annual loss of money through poor quality gasoline."

Members of the Chicago Motor Club and the Chicago Automobile Club have been invited by the officers of each to report personal experiences with poor quality gasoline. These reports will later be used in aiding the passage of the ordinance now in preparation by Alderman Lynch.

BALTIMORE OILS HINGES TO OPEN DOORS TO N. W. D. A.

All Plans Made for Record Convention Outside of New York City—Registration on Friday Totaled 450—Fine Entertainment Program.

Everything is ready for the annual meeting of the National Wholesale Druggists' Association, which opens in Baltimore today and will continue its sessions until Thursday, with a steamer trip on Friday included. It is certain that the attendance will exceed that of any previous convention, with the single exception of New York, even the sessions at Atlantic City falling short in this respect. Thus far accommodations for 450 persons have been secured at the various hotels, as against 420 at Atlantic City, and not less than 35 per cent. of this total will be made up of ladies, who will also be here in larger number than they ever turned out before.

Good weather is especially desired for the three big outdoor events scheduled, one of these being the oyster roast provided for Wednesday by the Pompeilan Olive Oil Company at a shore along the Patapsco, a second the garden party arranged by Dr. A. R. L. Dohme, president of Sharp & Dohme, at his residence in Roland Park, Baltimore's most beautiful suburb, for Thursday afternoon, when professional singers and other entertainers of high repute will contribute to the program, and the trip by steamer to Annapolis and the Naval Academy on Friday.

Special Guides at Annapolis.

Captain Eberle, superintendent of the Naval Academy, has advised the committee that he will provide guides over the various establishments on the Naval Academy grounds, and that he has made plans for a boat drill and land exercises by the midshipmen. Dinner at historic Carvel Hall will be a feature of the Annapolis visit. Both the president's reception on Monday evening and the annual banquet on Thursday night will take place at the Belvedere Hotel, the ball room there affording larger space facilities than the Emerson, where the business sessions will take place. Dances, card parties, golf games and other diversions have been provided, and the strain of the business deliberations will be relieved by social events. A buffet supper will follow the ceremonies of the president's reception, and at the banquet the retiring president, Charles Gibson; Mayor Preston, of Baltimore; the newly elected president; Judge Charles W. Heulsler, of the Supreme Bench of Baltimore, and William P. Malburn, assistant secretary of the Treasury at Washington, will be among the speakers.

The business proceedings will include the reading of committee reports, and the presentation and discussion of papers dealing with many phases of the wholesale drug trade, the commercial aspects, the ethics of the business and the economic and professional features being included. The association is expected to take action on a number of questions that claim the attention of members, and the conditions likely to follow the war in Europe are certain to receive the most serious consideration. The association, in fact, is expected to make wholesale drug trade history.

Various big Baltimore establishments will be open to the visiting members, having made special preparations to conduct parties through their respective laboratories and work rooms.

Local Committees in Charge.

The members of all the committees entrusted with the arrangements for the Baltimore convention are combined in the Entertainment Committee and the Ladies' Committee, which include the following:—

Entertainment Committee.—H. H. Robinson, chairman; L. Weigert, secretary; G. M. Armor, H. A. Allers, G. F. Baily, James Baily, R. H. Bond, J. M. Bellamy, J. Emory Bond, H. F. Baker, A. L. Carter, James Carey, Chas. H. Carey, M. H. Carter, Parker Cook, W. G. Cook, W. W. Curtis, Dr. A. R. L. Dohme, H. L. Dulaney, H. B. Dunning, John J. Gilbert, H. B. Gilpin, Donald N. Gilpin, M. Goldsborough, Wm. Graham, L. Gerhardt, E. Herman, Dr. H. P. Hynson, Louis E. Heidstetter, Joseph F. Hindes, Philip I. Heulsler, James E. Hancock, G. H. Klingstein, J. Walter Levie, S. Lowey, A. E. Mealy, Chas. P. Matthews, W. M. McCormick, R. A. McCormick, N. Musher, Jos. S. McWilliams, John C. Muth, John S. Muth, George C. Muth, Charles P. Muth, William A. Muth, Edward C. Muth, Tom J. Norman, James Owens, H. Plerpont, G. B. Perkins, R. C. Ringgold, W. F. Rightor, Ernst Stauffen, W. H. Sailer, R. Stagmer, C. G. Stone, E. D. Taylor, Owen Webb, S. L. Willard, F. P. Wohnlich, John Winkelman, L. J. Yakel and Eugene B. Reeves.

Ladies' Committee.—Mrs. W. H. Sailer, chairman; Mrs. G. M. Armor, Mrs. J. M. Bellamy, Mrs. J. Emory Bond, Mrs. Richard H. Bond, Miss Emily B. Baily, Mrs. G. Frank Baily, Mrs. Allen Carter, Mrs. LeRoy Carter, Mrs. Helen H. Carey, Mrs. A. R. L. Dohme, Mrs. Christie Dulaney, Mrs. D. N. Gilpin, Mrs. Wm. Graham, Mrs. Jos. Hindes, Mrs. Philip I. Heulsler, Miss Lillian Hancock, Mrs. John Klingstein, Mrs. Simon Loewy, Mrs. J. Walter Levie, Miss Cecilia M. Muth, Mrs. A. E. Mealy, Mrs. H. Von Marees, Mrs. C. E. Matthews, Mrs. Chas. P. Muth, Mrs. George C. Muth, Mrs. R. A. McCormick, Mrs. Jos. S. Owens, Mrs. James Owens, Mrs. M. G. Plerpont, Mrs. H. H. Robinson, Miss Isabel L. Sailer, Mrs. E. Stauffen, Mrs. J. W. Wenck, Mrs. LeRoy E. Walker, Mrs. L. Weigert and Mrs. Louis J. Yakel.

Annual Meeting of Boston Paint and Oil Club and Election.

Boston, Sept. 29, 1916.

The annual meeting and regular monthly dinner of the Paint and Oil Club of New England was held at Young's Hotel last evening.

The following officers were elected for the ensuing year:—President, H. F. Staples (re-elected); vice-president, C. A. Adams, of J. B. Varick & Co., Manchester, N. H.; Secretary-treasurer, Fred L. Moses, Boston; directors, H. L. Russell of J. Russell & Co., Holyoke, Mass.; M. F. Bragdon, of M. F. Bragdon & Co., Portland, Me.; James R. Mearey, of the J. Prince Company, Boston; Wm. H. Rockwood, of Howe & French Company, Boston; David Stern, of the National Oil Company, Boston; Frank L. Nutting, of Dexter Bros. Company, Boston; E. C. Street, of Wilhelm, Dexter & Co., Boston.

There was a good attendance of members. At the business meeting, among the reports presented was one by George C. Morton, of Carpenter, Morton Company, reviewing the work of the Clean Up and Paint-Up Committee and campaign. Mr. Morton's report was received with great satisfaction and enthusiasm and the club urged to continue the work.

It was voted to send Secretary Moses to the national convention in Atlantic City with the two regular delegates, these being George L. Gould, of Gould & Cutler, and C. S. Robbins, of Wadsworth, Howland Company.

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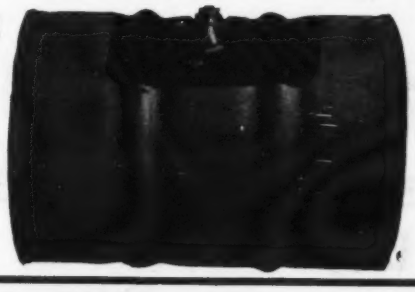

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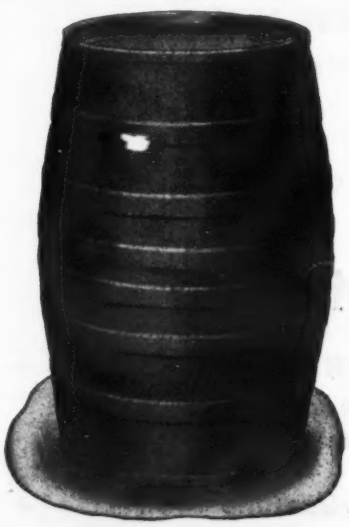

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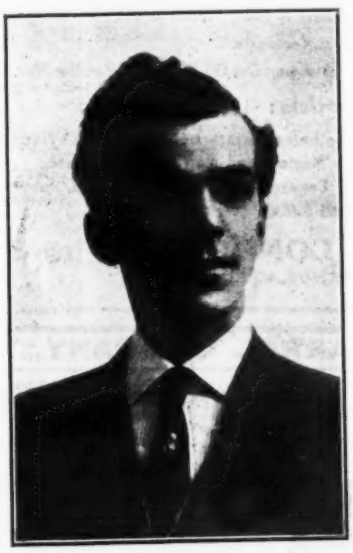
CHICAGO KNIGHTS OF ROUND TABLE GIVE FAREWELL DINNER TO EDWARD B. CARSON

On Saturday night, September 23, the Knights of the Round Table tendered their "Mule Driver," Edward B. Carson, a farewell dinner at the Grand Pacific Hotel. In addition to the members of the Knights present, fifteen or more personal friends of Mr. Carson were included in the list of guests. J. A. Von Specht was the toastmaster.

After welcoming the guests Mr. Von Specht explained that the dinner was inspired by the Knights of the Round Table in compliment to Mr. Carson and the esteem in which he is held by his brother knights, and as an expression as a body of their deep regret at his early departure from Chicago to Tulsa, Oklahoma, where he will assume the position to which he has been elected within a short time, the secretaryship of Cosden & Co.

Fred G. Shreves and Mr. Crenshaw were called upon for remarks, and E. C. Ennis of the Round Table, in behalf of



E. B. CARSON.

the members, presented Mr. Carson with a beautiful watch fob. Remarks then became general and almost everyone present had to "do his bit." Mr. Carson responded felicitously.

While the dinner was being served professional talent entertained.

Mr. Carson at one time was a tank-wagon driver for the Standard Oil Company, and later became sales manager of the Consumers' Refining Company, and vice-president of the Missouri Valley Oil Company.

The menu served was as follows:—

Blue Points (Deep Rock)
Celery and Olive, a la Poop Deck
Parlor Pea Soup
Half Broiled Milk Chicken (a Syracuse Broiler, Undressed)
Brussels Sprouts (Missouri Valley Specials)
"French" Fried Potatoes (The only thing "French" on the menu. This is war talk)
Combination Salad (Oh! Baby!)
Roquefort Cheese Dressing, a la Kansas City Germ
Ice Cream, Cake and Coffee
G. P. Special P. G. (on application)

The following members of the Round Table were present:—

H. Bayard, of Cosden & Co.; R. E. Borland, of the Riverside Oil Company; J. M. Carson, of the Union Petroleum Company; E. C. Ennis, of the Petroleum Products Company; J. P. Graves, of the William Graves Tank Works; J. C. Hunter, of the Cleveland Steel Barrel Company; J. S. Hoagland, of the Union Petroleum Company; O. Hughes, of the Southern Oil Corporation; H. E. McCormick, of the Midland Petroleum Company; C. W. Perry, of the Cataract Refining Company; J. B. Sherwin, of the Triangle Oil Company; Harry Shaw, of the "Oil News;" M. G. Sanderson, of the Warren Lubricant Company; E. W. Teagle, of the Texas Company; L. E. Thorp, F. P. Whitfield, and J. A. Von Specht, of the Oil, Paint and Drug Reporter.

Underground Wastes in Oil and Gas Fields.

"Underground Wastes in Oil and Gas Fields, and Methods of Prevention," is the title of Technical Paper 130, just issued by the United States Bureau of Mines. The authors, William F. McMurray and James O. Lewis, in introducing their subject, define underground waste as the "unnecessary destruction or lessening of the value of underground supplies of oil, natural gas, and potable water." The authors further say:

The maximum usefulness could be derived from a pool of oil or gas by its being controlled by one competent management, as under such conditions it could be developed with the least waste and at the smallest cost. However, rarely is a pool under one control, ordinarily a pool is divided among many owners. To get the best results the operators should act in unison for the protection of their common sources of supply and for their mutual benefit. To make co-operation among the producers in a field effective, it seems necessary for them to organize with some central authority that can furnish protection against careless, inefficient, or even deliberately negligent acts of individuals. The center of this organization should be supplied with all the data affecting the common interests, which could be kept confidential if necessary, and from this information concerning conditions in the field, general policies for development and operation could be outlined. That would work to the best interests of all concerned.

There is no business today in which, by its very nature, there is more need for co-operation than among the oil and gas operators, yet they have been able to do practically nothing by themselves. Nearly all attempts at co-operation among oil and gas producers have failed, primarily because there was no authority to compel the observance of the will of the majority by individuals who did not choose to follow the policies laid down.

In this paper the writers have endeavored to establish the manner and importance of underground waste by citing a few cases and to show the means whereby it can be prevented.

The flooding of oil deposits by water from strata above or below the producing sand is discussed, the writers stating that such flooding is avoidable and due to faulty drilling methods or other preventable causes. They say that when water first appears in a well, a careful and systematic study should be made, and the operator should never assume that the advance of water is the natural, and possibly unpreventable, invasion that marks the depletion of the field.

The authors have discussed the flooding of gas deposits by water from sand above or below the gas sand, and examples are given. The waste of gas by migration or dissipation was also investigated, and the authors in their report state that the amount of gas that can be taken up by strata commonly found in oil and gas fields is usually underestimated by operators, as there is seldom any considerable thickness of beds which do not include some porous formations. Moreover, it is said, it is a common axiom among gas producers that once the gas sand is tapped the gas must be utilized quickly because it will not remain stored, but in some manner escape.

The authors state that the waste of oil by migration and dissipation is less than that of gas, as the movement of oil underground is much slower than that of gas, wastes are easier to detect and control, and oil is more closely watched by the operator. The authors have also discussed and given interesting examples of the waste and pollution of fresh water.

As a means of preventing underground waste of oil, gas and fresh water, the authors recommend the use of mud-laden fluid, and point out the inadequacy of packers and cement, and the mechanical impracticability of properly protecting a series of these deposits by strings of casing.

Copies of this paper may be obtained free of charge by addressing the Director of the Bureau of Mines, Washington, D. C.

DRUGS AND CHEMICALS IN CHINA MARKETS DURING THE TWO YEARS OF WORLD WAR

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Washington, Sept. 29, 1916.

The Bureau of Foreign and Domestic Commerce has received some interesting price quotations of drugs and chemicals from Vice-Consul A. E. Carleton, located at Hongkong. These quotations compare the prices at Hongkong as of July 1, 1914; April or May, 1915, and May or June, 1916. Referring to these price lists, Consul Carleton says:

"The effect of the present war on market conditions for all kinds of drugs and chemicals has been most pronounced, and it is interesting to note the variations in the wholesale quotations during certain periods. There have been many fictuations in the prices, as the following table illustrates, and there is scarcely a single instance in which a real decrease in the prevailing quotations since July 1, 1914, can be found. Germany and England were at the beginning of the war the largest exporters to the Far East of drugs and chemicals, but at present the United States supplies the greater portion of these.

"The prices given in the table are f. o. b. London or Liverpool, representing the wholesale prices. To these must be added freight, insurance, other charges, and the profits to the retailers in Hongkong. The prices are based on English invoice quotations, and follow:—

Articles.	July 1, 1914.	April or May, 1915.	May or June, 1916.
Acetanilid .....lb.	$0.85	$1.21	$2.79
Acids: Acetyl-salicylic....	4.13	5.35	13.18
Acid, boric.....cwt.	8.27	11.70	14.25
Acid, carbolic (a).....lb.	.24	.64	.64
Acid, oxalic.....	.24	.30	.56
Acid, salicylic.....	2.31	2.92	5.83
Acid, tannic (a).....	.79	1.21	1.46
Ether	1.70	2.10	2.49
Bismuth subnitrate.....	2.67	2.98	3.81
Caffeine .....oz.	.32	.48	.80
Caffeine citrate.....	.30	.40	.60
Calcium lactate.....lb.	1.70	2.19	4.50
Cerium oxalate.....	.24	.24	1.82
Cocaine .....oz.	.97	1.03	1.35
Codein .....oz.	7.29	8.26	7.29
Creosote	.44	.46	.60
Dextrine (a) .....lb.	1.21	3.69	4.13
Emetine hydrochlor..gms.	2.19	2.19	2.19
Iron and ammonium citrate (a) .....lb.	.73	.93	1.33
Iron and ammonium tartrate (a).....	.73	.93	1.33
Folic buchu.....	2.19	2.31	1.82
Folic stramonii.....	.26	.26	.24
Folio urve urise.....	.10	.10	.12
Gelatine (a).....	.73	.77	1.03
Glycerin, specific gravity 1.260 (a).....cwt.	29.46	30.17	33.33
Guiacol .....oz.	.30	.30	.81
Guiacol carbonate.....	.30	.30	1.70
Gums—			
Acacia .....lb.	.73	.79	.79
Benzoin	.62	.66	1.27
Asafetida	.73	.73	.85
Kino	.75	.85	1.15
Mastic	2.19	2.19	.85
Myrrh	.52	.48	.50
Sandarach	..	..	.48
Shellac	..	..	.48
Tragacanth	2.31	2.55	4.01
Tragacanth, powder....	2.19	2.31	3.77
Gutta Percha.....	1.94	2.06	2.75
Hamamelis .....oz.	.26	.36	.40
Hexamine .....lb.	.97	1.21	1.58
Homahopine .....gram.	.32	.32	.36
Mercuric iodide.....oz.	.38	.38	.40
Mercurous iodide.... ...	.36	.36	.38
Mercuric chloride... ..lb.	1.21	1.25	1.94
Mercurous chloride.....	1.21	1.37	1.94
Iodoform	5.08	5.60	6.32
Iodine, resublined.....	4.13	4.38	5.47
Formaldehyde (a).....	.22	.22	.36
Magnesia syrup.....cwt.	4.86	5.47	10.83
Menthol	3.46	3.89	4.25
Naphthalene (a).....	.09	.09	.18
Oils—			
Sweet Almonds.....lb.	.79	.85	.89
Anise	1.46	1.46	1.27
Orange	2.67	2.79	3.52
Bergamot	4.17	4.62	4.50
Chaulmovgra	1.00	1.00	1.09
Cinnamon	1.05	1 15	1 09
Citronella (a) .....lb.	.34	.64	.73
Copabine	.73	.97	1.70
Goulthoria	2.28	2.43	5.47
Cottonseed .....gal.	.95	.97	1.39
Lemon	1.74	2.06	1.58
Linseed	.95	1.01	1.09
Peppermint	9.61	10.94	13.13
Spearmint .....oz.	1.29	1.33	1.33
Codliver .....gal.	2.51	2.67	7.41
Neatsfoot	1.46	1.52	1.46
Castor (a) .....lb.	.20	.22	.26
Santal (a)	4.13	4.13	9.36
Mustard vol.....oz.	.77	.77	1.46
Coco butter .....lb.	.48	.50	.79
Turpentine	.22	.24	.28
Pancreatine .....oz.	.48	.60	.60
Pepsin	.42	.60	.42
Phenacetine	.38	.44	1.33
Phenazine	.34	.40	1.64
Phenolphthalein	.28	.28	1.33
Lead acitate .....lb.	.48	.52	.42
Lead oxide	.13	..	.14
Caustic potash	.08	.18	2.92
Potassium sulphide	.26	.26	.79
Potassium acitate	.52	.52	1.21
Potassium bromide.....	.97	1.33	6.32
Potash	.48	.48	.73
Potash cyanide 40% (b)...	.48	1.00	1.21
Potassium fericyanide....	1.21	1.21	4.86
Potassium Iodide	2.67	3.89	4.50
Quinine hydrobromate.oz.	.40	.68	1.70
Quinine hydrochlorate....	.48	.60	1.39
Quinine sulphate (a).....	.30	.44	.68
Quinine valerate	.52	.79	2.31
Ipecac (a) .....lb.	3.65	4.86	6.56
Resorcin .....oz.	.20	.20	1.64
Sugar of milk (b).....lb.	.26	.28	.38
Salol .....oz.	.16	.18	.48
Santonine	2.67	3.89	3.04
Soda ash, 58% (b)....cwt.	2.43	2.43	3.02
Caustic soda, C. P. (b)...	.26	.30	1.15
Caustic soda, C. M. (b)..	4.38	4.86	9.83
Sodium bromide .....lb.	.83	1.33	4.74
Potassium permanganate..	.22	.44	2.67
Sodium salicylate	2.43	3.65	5.22
Sulphur lotum	.09	.09	.10
Thymol .....oz.	.48	.60	.85
Zinc oxide (a) .....lb.	.30	.32	.32

Articles marked "a" and "b" are imported into Hong Kong in large quantities for local use, and particularly for re-export to Canton and other coast ports.

Report of September Meeting of National Executive Board, N. A. D. C.

The September meeting of the national executive board of the National Association of Drug Clerks was held in Chicago, September 20, when it was decided to hold the seventh annual convention at the Auditorium Hotel, Chicago, Thursday, Friday and Saturday, June 7, 8 and 9, 1917.

Paul J. Mandabach has been placed in complete charge of the convention and a drug exhibit, which will be open to the public.

A "membership contest" has been planned, whereby in every State in which 20 or more new members are enrolled within the next six months, the clerk who secures the largest majority of new members in his respective State will have his expenses paid to Chicago to attend the seventh annual convention.

Resolutions.

Beside the regular routine of business the following resolutions were adopted:—

Whereas, The recognized colleges of pharmacy are at all times striving to raise the grade standing of their students, and

Whereas, The higher the standing of the student graduates of the colleges of pharmacy, the better class pharmacists we will have, and

Whereas, The offering of prizes stimulates a deeper interest in the student, forcing him to more concentrated efforts in his studies to the end of securing higher marks,

Therefore be it resolver, That the National Association of Drug Clerks offer life membership to the students with the highest averages in the studies of pharmacy, chemistry and materia medica during their senior year.

Be it further resolved, That donations be solicited and accepted to cover the fees of these life memberships.

Court Vacates Attachments on Tennessee Copper Company's Assets.

Preliminary skirmishes in the impending legal battle between William H. Stiner & Son and the Tennessee Copper Company, for the recovery by the former concern of almost $1,000,000 damages, which it claims to have sustained, as a result of an alleged breach of contract by the Tenessee Copper Company, through the failure to deliver 8,300 tons of sulphuric acid and 1,850 tons of carbolic acid, have been indulged in within the last week. Upon application made by Vogel & Vogel, as attorneys for the Tennessee Copper Company, Justice Goff, in the Supreme Court, vacated last Tuesday the attachments granted on August 22 by Justice Delehanty whereby the Stiner company tied up the bank accounts of the Tennessee Copper Company with J. P. Morgan & Co., the National City Bank and numerous other local banking institutions.

Following this vacating of these attachments, Milton Mayer, the attorney for William H. Stiner & Son, took an appeal from Justice Goff's decision on this point to the Appellate Division of the Supreme Court. The civil suit, for $980,793 damages brought by William H. Stiner & Son against the copper company will not be affected in any way by the vacating of these attachments, but will come up for trial in the Supreme Court this month or next month.

In deciding to vacate the attachments upon the funds and assets of the copper company, which had been obtained by William H. Stiner & Co., in connection with its damage suit against that corporation, on the ground that it was a "foreign" corporation, Justice Goff ruled that there was not competent or sufficient proof of non-residence of that company nor of the value of the phenol crystals and sulphuric acid nor of the extent of the damages suffered through the alleged breach of contract.

London Closing Prices by Cable.

London, Sept. 30, 1916.

Shellac has had a further sharp break, in consequence of the government's action in halting speculation in this commodity, and fair free quality of T. N. on spot is now being offered at 122s., or 19s. below the figure named a week ago, while the December delivery is being quoted at 120s. 6d., or 10s. 6d. lower than at the close of the previous week.

Menthol has been marked up sharply and is now being held a shilling higher than a week ago, at 12s. 6d. for Kobayashi on spot.

Citric acid has weakened and is now being offered at 2s. 7d., or 2d. below the figure asked at the close of the previous week.

Cocaine has also eased off somewhat and hydrochloride or muriate is now being offered at 18s. in 175-ounce lots on contract, or 6d. below the level previously noted.

Camphor has made further progress in an upward direction, to the extent that the two-and-a-half-pound slabs of Japanese refined gum have been raised 3d. further to 3s. The ounce tablets of Japanese refined gum are still being quoted at 2s. 9d. and English bells at 2s. 5d. Crude gum continues to be held at the following figures:—China, nominal (none in London); Japan B., 154s.; B. B., 164s. 6d.

The following drugs and other commodities remain unchanged:—

Quinine, 2s. 5d. for best German sulphate in second hands.

Ipeca: root, Cartagena, 7s.; Rio, 10s. 6d.

Peppermint oil, Wayne county, 10s.; H. G. H., 15s.

Lemon oil, 3s. 9d. for good foreign brands.

Buchu leaves, 5s. 3d. for good round green.

Codeine, 21s. for hydrochloride or muriate in 175-ounce lots on contracts.

Opium, 34s. 6d. for good Turkey druggists' quality; 25s. 6d. for Persian gum.

Glycerine, 114s. per cwt., in 5-ton lots of 56-pound tins, in cases.

Morphine, 13s. 3d. for good brands.

Cocoanut Oils
Palm Oil
Olive Oil
Olive Oil Foots
Soya Bean Oil
China Wood Oil
Drugs and Chemicals

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CHICAGO, ILL.
162 N. Dearborn St.
Central 3686
BOSTON, MASS., 7 Water St.

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Salicylates
Salol, Etc.
Amorphous Phosphorous
Barium Binoxide
Bicarbonate of Soda
Bichromate of Soda
Bleaching Powder
Caustic Soda
Chlorate of Potash
Citric Acid
Chrome Alum
Sal Soda
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Factory Representation Solicited

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Efficiency, durability and economy of operation are features for which "BUFLOKAST" apparatus is noted. It is built to compete in satisfaction instead of price—that's why it is constantly replacing other equipment.

In "BUFLOKAST" apparatus you receive the co-operation of an experienced organization thoroughly conversant with your chemical problems backed by a laboratory-controlled plant and many years' experience in building chemical equipment.

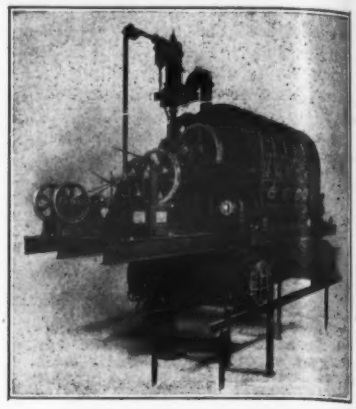
"BUFLOKAST" INCLUDES

Apparatus and Complete Plants for manufacturing heavy chemicals; nitric, sulphuric, hydrochloric acid, caustic alkalies and organic chemicals; Aniline, Phenol, Picric Acid, Trinitrotoluol and other high explosives, Paranitraniline, Beta Naphthol, Alphanaphthol, Alphanaphtylamine, Betanaphtylamine, Naphthol-, Naphtylamine-, Amido-naphthol-sulfonic acids, and other intermediate products for Coal-Tar Colors.

Special apparatus for all operations of the organic chemical industry, such as nitration, sulfonation, reduction, chlorination, caustic fusion, etc., open or under pressure.

Complete Chemical plants designed, constructed and operated (under guarantee, if desired).

"BUFLOVAK"
Vacuum Apparatus



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WE BUILD DRYERS FOR ALL MATERIALS

VACUUM SHELF DRYERS, for drying materials that can be handled in pans or trays.

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ANIMAL AND FISH OILS

Cod, Newfoundland	70	@	72
domestic, prime	67	@	69
Degras, French ℔ lb.	—	℔	—
English	6½@		6¾
German	—	℔	—
American	6¼@		6½
neutral	*40	℔	80
Herring, f. o. b. factory ℔ gal.	—	@	—
Horse	10	@	10¼
Lard, prime winter ℔ gal.	1.08	@	1.16
off prime	96	@	98
extra No. 1	87	@	92
No. 1	82	@	86
No. 2	76	@	80
Menhaden, Northern, crude	—	@	—
Southern, f. o. b. factory	50	@	—
brown, strained	58	@	60
light, strained	60	@	62
yellow, bleached	62	@	64
white, bleached winter	64	@	66
Neatsfoot, 20 degrees	1.05	@	1.10
30 deg. cold test	1.00	@	1.05
40 deg. cold test	95	@	1.00
prime	90	@	92
dark	80	@	84
Oleo oil ℔ lb.	12	@	13
Porpoise, body	*50	@	55
jaw	*22.00	@	24.00
Red elaine ℔ lb.	8½@		8¾
Red, saponified	8¾@		9
Stearic acid, single pressed	12	@	12½
double pressed	13	@	13½
triple pressed	14	@	14½
Sod oil	7	@	8
Sperm, bleached winter, 35 deg. cold test ℔ gal.	80	@	82
48 deg. cold test	78	@	80
Natural winter, 38 deg. cold test	76	@	78
48 deg. cold test	74	@	76
Seal, white	*70	@	72
Tallow, acidless	90	@	92
prime	88	@	90
Whale, natural, winter	64	@	66
bleached	66	@	68
extra bleached, winter	68	@	70

*Nominal.

LUBRICATING OILS.

Black reduced, 29 gravity, 25@ 30 cold test ℔ gal.	13½@		14
29 gravity, 15 cold test	14	@	15
summer	15	@	16
Cylinder, light filtered	21	@	26
dark filtered	18	@	19
extra cold test	29	@	31
dark steam refined	15	@	19
Natural, West Virginia, 29 gravity	26½@		27
filtered lemon, 37½@38 gravity	21½@		22
gravity	21½@		22
white, 30@31 gravity	33	@	34
32@34 gravity, bloomless	21½@		22
31 gravity, wool grade	19½@		20
Paraffine, high viscosity	29½@		30
905 specific gravity	21½@		22
895 specific gravity	18½@		19
red paraffine	18	@	19
Spindle, No. 200	24	@	25
No. 160	23½@		24
No. 110	22	@	23½
No. 80	21	@	22
filtered	28	@	35

VEGETABLE OILS

Linseed, raw, car lots ℔ gal.	76	@	—
5-barrel lots	77	@	—
boiled, car lots	77	@	—
boiled, 5-barrel lots	78	@	—
double boiled, car lots	79	@	—
double boiled, 5-barrel lots	79	@	—
refined, car lots	80	@	—
refined, 5-barrel lots	80	@	—
varnish oil, according to grade	81	@	82
f. o. b. Minneapolis, Friday, car lots	74	@	—
Cottonseed, crude, f. o. b. mills	68½@		69
yellow summer prime	10½@		10¾
white summer	—	@	—
yellow winter	—	@	—
Olive, denatured ℔ gal.	96	@	98
foots	9¼@		9¾
Palm, Lagos, spot	9½@		9⅝
commercial, spot	9	@	9¼
prime, red, spot	9¼@		9½
Palm kernel	13	@	13½
Cocoanut, Cochin, spot	14	@	15
Ceylon	13½@		14
domestic, in tanks	12½@		12¾
Corn oil, crude, in bbls	*10.00	@	—
refined, in bbls	10.61	@	10.66
Soya bean, English, spot, bbls	—	@	—
Manchuria, spot, bbls	9	@	—
Sesame, per gal	*1.15	@	1.25
Mustard	*1.20	@	1.30
Peanut, crude, spot	72	@	74
edible, per gal	88	@	96
Poppy seed	*1.70	@	1.85
China wood oil	11	@	12
Pine oil, white steam	—	@	—
yellow steam	60	@	62½
Tar oil, genuine distilled	35	@	40
Tar oil, commercial	21½@		—
Rosin oil, first rectified	—	@	38
second rectified	—	@	48
third rectified	—	@	60
fourth rectified	—	@	70
Rapeseed, in barrels, refined, French	—	@	—
blown	96	@	98
refined English	92	@	94

*Nominal.

OIL CAKE AND MEAL

Linseed, cake, domestic ℔ short ton	36.00	@	37.00
meal	38.00	@	—
Cottonseed cake—			
f. o. b. Galveston	32.25	@	—
f. o. b. New Orleans	27.75	@	—
Cottonseed meal—			
f. o. b. Atlanta	32.50	@	—
f. o. b. Montgomery	—	@	—
f. o. b. New Orleans	31.00	@	32.50
Corn cake ℔ short ton	28.50	@	—
meal	30.60	@	—

LARD, TALLOW, STEARINES AND GREASES

Candles, adamantine, ps, 16 ozs.	10½@		11
14 ozs	7¾@		8½
paraffine, 4s, 6s and 12s	9	@	10
Candles, patent sperm, 4s and 6s	38	@	40
sperm, 4s and 6s	33	@	34
stearic acid—			
plain, 4s, 6s and 8s	16	@	—
patent ends 4s and 6s	16½@		—
cartons, 6 lbs. each	16½@		—
Lard, Middle West	14.00	@	15.00
city steam	14¾@		—
compound	12½@		12½
Stearine, lard	15¾@		—
oleo	13½@		14¼
Tallow, special, loose	10¼@		—
Neutral lard	15½@		—
Grease, white	8¾@		9¼
yellow	8¼@		8¾
house	8¼@		8¾
brown	7¼@		8
yellow grease, stearine	8¾@		9¼
white grease, stearine	9	@	10

LEAD, ZINC AND PIGMENTS

Pig lead	7	@	—
White lead, basic carbonate, American dry ℔ lb.	8¾@		—
in oil (100-lb. pkgs. or over)	9¾@		—
English, in oil	12	@	—
White lead, basic sulphate	8½@		—
Litharge, American, powdered	9¼@		—
English glassmakers'	10	@	11
Lithopone	8½@		10
Red lead, American	9@		—
in oil	10¼@		—
foreign	12	@	14
English glassmakers'	12	@	14
Orange mineral, American	12	@	12½
English	—	@	—
French	16	@	18
German	12	@	*13
Flake white	9½@		—
Spelter	9¼@		—
Zinc oxide, white—			
German (French process) red seal	Nominal		
green seal	Nominal		
white seal	Nominal		
French, red seal	16	@	18
green seal	Nominal		
American process	9¾@		9⅞
French process, red seal	16	@	16½
green seal	16½@		16⅝
white seal	17	@	17¼
Barytes, prime white, foreign ℔ ton.	38.00	@	40.00
domestic, prime white or floated	25.00	@	35.00
off color	22.00	@	24.00
Blanc fixe in bulk (original casks 1,000 lbs. each) ℔ ton.	120.00	@	—
dry (in bbls., 600 lbs.)	4½@		—

DRY COLORS

BLACKS.

Bone ℔ lb.	4	@	8
Drop	7	@	12
Ivory	16	@	80
Carbon gas	14	@	20
Lampblack	12	@	18
Mineral blacks ℔ ton.	20	@	30

BLUES.

Celestial ℔ lb.	20	@	30
Chinese	1.50	@	1.80
Italian	Nominal		
Milori	Nominal		
Prussian	1.30	@	1.80
Prussian, foreign	—	@	—
Soluble	1.50	@	2.00
Ultramarine	17	@	40

BROWNS.

Sienna, Italian, burnt and powdered ℔ lb.	6	@	8
burnt, lumps	4	@	6
raw, powdered	4	@	6
raw, lump	4	@	6
American, burnt and pow'd	2	@	3
raw	2¼@		3
Spanish brown ℔ ton	16.00	@	20.00
Umber, Turkey, burnt and pow'd	4	@	5
burnt lumps, selected	4½@		6
raw and powdered	3	@	3½
raw, lumps	3½@		5
American, burnt	2	@	2½
raw	2	@	2½
Vandyke brown	*10	@	—
soluble	*10	@	—

GREENS.

Chrome, chemically pure ℔ lb.	40	@	65
grinders'	16	@	20
jobbing	13	@	15
common	9	@	13
Paris, in bulk, arsenic, kegs	27	@	..

REDS.

Carmine, No. 40, bulk ℔ lb.	4.75	@	5.50
Crocus martus	3	@	5
Indian red, standard	5	@	6
Rose pink	30	@	45
Tuscan red	20	@	30
Venetian red	2	@	2¾
Oxide, red	3	@	8½
Para, pure (toners)	2.50	@	3.00
commercial	40	@	60
Vermilion, English	1.50	@	1.60
Chinese	95	@	1.00

YELLOWS.

Chrome, chemically pure ℔ lb.	25	@	29
Ocher, French	2¼@		3
foreign, golden	4¾@		5½
domestic ℔ ton.	20	@	30
golden ℔ lb.	6	@	8

*Nominal.

OTHER PAINT MATERIALS

Bronze powder ℔ lb.	75	@	5.00
Casein	17	@	26
Chalk, English	Nominal		
French	Nominal		
Clay, china, imported	15.00	@	32.00
domestic	12	@	15
Cobalt oxide ℔ lb.	1.00	@	1.05
Feldspar ℔ ton.	8.00	@	12.00
Fuller's earth, powd. ℔ 100 lbs.	80	@	1.05
Marble flour ℔ ton	8.00	@	8.50
Manganese, car lots	60.00	@	100.00
Magnesite, raw ℔ ton	10	@	11
calcined, pow'd	30.00	@	35.00
Plaster of paris ℔ lb.	1.50	@	1.70
dentists'	1.50	@	1.85
Pumice stone, original cks. ℔ lb.	3	@	4
selected, lumps in bbls	7	@	10
powdered, pure, lbs	3	@	4
Putty, com'l, in 1, 2, 3, 5 lb. tins	3.30	@	4.00
pure, in do	3.70	@	4.80
linseed oil, in do	5.30	@	5.75
colored, in do	5.20	@	5.75
white, lead, in do	5.30	@	5.75
com'l, in bladders	1.70	@	2.00
pure, in do	2.05	@	2.20
linseed oil, in do	4.00	@	4.50
Rotten stone, orig'l casks ℔ lb.	4	@	7¼
selected lumps	5½@		20
powdered, in bbls	2½@		4
Soapstone, pow'd, in bags ℔ ton.	10.00	@	12.50
Silex	20.00	@	36.00
Smalt, German blue ℔ lb.	6	@	10
super, black	4	@	7
Talc, American ℔ ton.	9.00	@	13.00
French	15	@	22
Italian	20	@	35
Terra alba, Am. No. 1 100 lbs.	85	@	90
No. 2	70	@	75
English	1.00	@	1.10
French	90	@	1.10
Whiting, commercial	90	@	—
gilders'	1.08	@	—
extra gilders'	1.15	@	—
American paris white	1.15	@	—
English cliffstone	1.25	@	1.60

METALLIC PAINTS

Brown ℔ ton.	18.00	@	20.00
Red	14.00	@	18.00

GLUES

Extra white ℔ lb.	18	@	24
Medium white	16	@	17
Cabinet	13	@	15
Low grade	14	@	15
Foot stock, white	12	@	14
brown	9	@	11
Common bone	10	@	14
Irish	15	@	17
French	20	@	50
German hide	12	@	*18
common	10	@	*12
Fish, liquid (in bbls. 50 gals. each)	80	@	1.40

COLORS IN OIL

Black coach, japan ℔ lb.	24	@	32
in oil	16	@	22
drop	16	@	22
lampblack	24	@	30
Blue, Chinese	1.50	@	1.75
Prussian	1.45	@	1.70
ultramarine	40	@	50
Brown, sienna, burnt	16	@	22
raw	16	@	22
Umber, burnt	15	@	21
raw	15	@	21
Vandyke brown	25	@	30*
Green, chrome, C. P.	70	@	—
paris	—	@	25
Red, Indian	15	@	20
Venetian	10	@	12
Yellow, chrome	60	@	38
ocher, French	11	@	13

VARNISH GUMS

Egyptian asphaltum ℔ lb.	20	@	25
Cuban ℔ ton.	30.00	@	60.00
Mexican	25.00	@	60.00
Barbadoes ℔ lb.	5	@	8½
California	22.50	@	30.00
Texas	16.00	@	20.00
Trinidad	25.00	@	30.00
Malta	25	@	—
Gilsonite	36.00	@	50.00
Manjak	25.00	@	60.00
Zanzibar, bean, pea white	30	@	35
pea white, sorts	25	@	—
bean and pea	58	@	62
Manila, pale	28	@	30
dark, hard	13½@		14½
bright amber	15	@	16
standard sorts	15	@	16
nubs, No. 1	7¾@		8
chips, No. 1	8¾@		9½
Congo copal picture	7½@		8
white	35	@	40
amber	29	@	—
dark	8½@		—
Pontinak, selected fine	12	@	17
straight	22	@	24
No. 1	18	@	19
No. 2	12	@	13
nubs	8¼@		10½
chips	9½@		10
Damar, Batavia	19½@		20
Singapore, No. 1	21	@	22
Singapore, No. 2	16	@	17
Singapore, No. 3	9	@	10
Kauri, No. 1	43	@	44
No. 2	28	@	30
No. 3	17	@	20
ordinary chips	13	@	14
B X	26½@		30
B 1 ordinary	24½@		26
B 2	16	@	17
brown chips, ordinary	9	@	10
brown chips, extra	16	@	22
bright dust	12	@	14
brown dust	4½@		5½
ordinary dust, white	8	@	9
brown No. 3	11	@	14
X dark	52	@	53
XX pale	59	@	60
XXX pale	70	@	72
XXXX extra pale	90	@	95
XXXXX picture quality	1.20	@	1.25

SHELLAC

D. C	38	@	39
V. S. O	38	@	39
Diamond I	37	@	38
Fine orange	34	@	35
Second orange	32	@	34
T. N	31	@	32
A. C. garnet	29	@	30
Kala button	25	@	27
Button	27	@	30
Bleached, commercial	31	@	32
bone dry	38	@	40

NAVAL STORES

Spirits of turpentine	47	@	—
Wood turpentine, steam distilled	41	@	—
destructive distilled	39½@		—
Rosin, common to good strained ℔ 280 lbs.	6.25	@	—
Large Florida graded rosins—			
B	6.30	@	—
D	6.35	@	—
E	6.55	@	—
F	6.60	@	—
G	6.70	@	—
H	6.75	@	—
I	6.80	@	—
K	6.85	@	—
M	6.90	@	—
N	6.95	@	—
W. G.	7.10	@	—
W. W.	7.25	@	—
Pitch, barrels (200 pounds)	4.00	@	4.75
Tar, kiln burned	7.00	@	7.25
Retort	7.25	@	7.50

WINDOW GLASS

United inches.	Bracket. Sizes.		Single AA	A	B	C
25	6x 8	to 10x15	$35.00	$30.00	$28.50	$28.00
34	11x14 } 12x13 }	to 14x29	36.50	31.00	30.00	29.00
40	10x26	to 16x24	39.00	33.00	31.00	30.00
50	18x22 } 20x20 }	to 20x30	42.50	37.00	34.00	....
54	15x36	to 24x30	44.00	38.00	35.00	....
60	20x28 20x34 }	to 24x36	45.00	40.00	36.00	....
70	28x32 } 30x30 }	to 30x40	48.00	43.50	39.00	....
80	32x38 } 34x36 }	to 30x50	54.00	49.50	43.50	....
84	30x52	to 30x54	57.00	52.50	47.00	....
100	40x86	to 40x90	....	....	....	....
25	6x 8	to 10x15	$46.00	$40.50	$38.50	
34	11x14 } 12x13 }	to 14x20	50.00	44.50	42.00	
40	10x26	to 16x24	55.00	48.50	44.50	
50	18x22 } 20x20 }	to 20x30	61.00	54.50	51.00	
54	15x36	to 24x30	62.50	56.00	52.00	
60	20x28 20x34 }	to 24x36	64.00	57.00	52.50	
70	28x32 } 30x30 }	to 30x40	68.00	61.00	56.00	
80	32x38 } 34x36 }	to 30x50	73.00	66.50	60.50	
84	30x52	to 30x54	74.50	68.00	62.00	
90	30x56	to 34x56	78.50	72.00	66.50	
94	34x53	to 34x60	80.00	73.00	68.00	
100	36x60	to 40x60	93.00	85.00	80.00	
105	40x62	to 40x64	194.50	176.50	125.00	
110	40x66	to 40x70	216.00	200.00	186.50	
115	40x72	to 40x74	242.50	221.00	208.00	

United inches.	Bracket. Sizes.		Double AA	A	B
120	40x76	to 40x80	268.00	258.50	245.00
125	40x82	to 40x84	312.00	285.50	272.00
130	40x86	to 40x90	339.00	312.50	299.00

An additional 10 per cent. will be charged for all glass more than 40 inches wide. All sizes over 52 inches in length, and not making more than 81 united inches, will be charged in the 84 united inches bracket. All glass 54 inches wide or wider, not making more than 116 united inches, will be charged in the 120 united inches bracket.

All fractional sizes not listed take the list of next larger listed size plus 10 per cent. On the first three brackets of A quality, single strength, discounts are 90 per cent. On first three brackets, B quality, discounts are 90-10 per cent. On other sizes discounts are 88 per cent. On double strength discounts are 89 per cent. on A quality and 90 per cent. on B quality.

OPIUM

Opium, cs	11.00	@	—
jobbing lots	11.05	@	—
powdered	11.70	@	—
granular	11.85	@	—

MORPHINE

Morphine, bulk, muriate and sulphate, 5-oz. cans ℔ oz.	5.50	@	5.60
acetate and alkaloid, ounce vials	6.95	@	—
diacetyl hydro-chloride ℔ oz.	6.70	@	7.35
ethyl	7.65	@	7.75

The inside prices apply to 25-oz. lots and the outside figures to smaller lots, in one delivery

CODEINE

Codeine, bulk, phosphate ℔ oz.	6.35	@	—
nitrate and muriate	7.50	@	—
alkaloid	8.50	@	—

The inside prices apply to 10-oz. lots and the outside figures to smaller quantities in one delivery.

QUININE

Quinine, sulp. and bisulph., manufacturers' quotations, 100-oz. tins ℔ oz.	50	@	—
50-oz. tins	50½@		—
25-oz. tins	51	@	—
5-oz. tins	52	@	—
1-oz. tins	55	@	—
second hands, American	50	@	58
Java	50	@	58
Cinchonine, alkaloid	20	@	—
sulphate	12	@	—
Cinchonidine, alkaloid	59	@	85
sulphate	35	@	50

SUNDRY DRUGS AND MISCELLANEOUS ITEMS

Acetanilid, C. P., in bbls ℔ lb.	55	@	60
Acetphenetidin	37.00	@	38.00
Acetone	22½@		23
Aconitine, ½ oz	1.80	@	—
Agar agar, No. 1	54	@	58
No. 2	52	@	54
No. 3	45	@	47
Agaric, white	*50	@	80
Alcohol, 188 proof ℔ gal.	2.64	@	2.66
190 proof, U. S. P.	2.66	@	2.68
cologne spirits, 190 proof	2.68	@	2.70
strictly grain, 190 proof	2.70	@	2.72
ref. wood, 95 per cent	70	@	73
97 per cent	75	@	78
purified	1.10	@	—
denatured, 180 proof	54	@	56
188 proof	55	@	57
Aldehyde, commercial ℔ lb.	65	@	70
Almonds, bitter, bags, boxes	28	@	30
Almonds, sweet, 28-lb. boxes	25	@	30
Almond meal	28	@	30
Aloin ℔ lb.	80	@	82
Ambergris, black ℔ oz.	10.00	@	15.00
gray	22.00	@	28.00
Ammonia, carb., domestic ℔ lb.	9½@		10¼
powdered	11¼@		—
lodide, U. S. P.	4.15	@	4.20
Amyl acetate ℔ gal.	4.75	@	4.85
Antipyrine, bulk ℔ lb.	21.00	@	23.00
Antimony, needle, fine powder	18	@	20
sulphate, 16 to 17 per cent	48	@	49
chlor (solution, bitter of antimony)	15	@	20
Areca nuts	8	@	10
Atropine, sulph ℔ oz.	50.00	@	—
alk	55.00	@	—
Balm of Gilead buds	22	@	24
Barium chlorate	*50	@	80
nitrate	15	@	16
dioxide	*38	@	—
Bay rum, Porto Rico ℔ gal.	1.80	@	1.85
St. Thomas	2.90	@	3.00
Benzol, pure, water white ℔ gal.	60	@	65
Benzol, 90 per cent ℔ gal.	65	@	70
Beta naphthol ℔ gal.	1.10	@	1.20
Bismuth, citrate ℔ lb.	3.50	@	—
salicylate	3.90	@	—
subcarbonate	3.40	@	3.45
subgallate	2.80	@	3.00
subnitrate	2.70	@	3.15
subiodide	3.25	@	—
tannate	3.50	@	—
valerate	3.50	@	—
Blue mass	58	@	60
Borax, crystals and granulated, sacks	6¾@		7
powdered, sacks	7	@	7¼
crystals, granulated and powdered, bbls	7¼@		7¾
Bordeaux, mixture, paste	3½@		6
powder	7	@	10
Bromide, ammonium, granular	1.00	@	1.01
potassium, granular	1.35	@	1.36
sodium, granular	80	@	81
strontium, granular	80	@	81
Bromine, technical, bulk	1.40	@	—
U. S. P.	1.50	@	—
Burgundy, pitch, domestic	4½@		5
foreign	25	@	—
Cadmium, bromide	4.25	@	—
iodide	5.25	@	—
metal sticks	1.90	@	—
Caffeine, alkaloid	13.00	@	15.00
bromide ℔ oz.	10.70	@	12.00
citrated	7.50	@	8.00
phosphate	17.50	@	18.75
sulphate	18.80	@	18.85
Calcium, hypophosphites	75	@	78
phosphate, precip	30	@	35
sulpho, carbolate	1.42	@	1.45
Calomel, American	1.36	@	—
Calamine	24	@	—
Camphor, monobromated	2.80	@	2.85
Cantharides, Chinese	95	@	1.05
powdered	1.15	@	1.25
Russian	4.25	@	4.50
powdered	5.00	@	5.25
Carbon, bisulphide	7	@	8
Cassia, fistula	12	@	12¼
Castile soap, white, pure	15	@	—
Marseilles	11	@	12
green, pure	11	@	13¼
ordinary	8	@	10
mottled, pure	11	@	13¼
ordinary	8	@	10
Castor oil, No. 1, bbls	14	@	—
cases	14½@		15
No. 3	13½@		14
Castoreum	10.00	@	—
Cerium oxylate	60	@	62
Chalk, precipitated, light, casks ℔ lb.	4½@		5¼
heavy	5½@		6
Charcoal, willow, pwd	4	@	6
Chloral hydrate	1.28½@		1.42
Chlorine, liquid	15	@	24
Chloroform	50	@	55
Chrysarobin	6.25	@	6.50
Citrates, iron, U. S. P.	73	@	75
iron and ammon	70	@	72
potash	1.70	@	1.72
soda	64	@	66
Citrine ointment	50	@	—
Civet	2.00	@	2.25
Cocaine, hydrochloride, crystals	4.25	@	4.50
Cocoa butter, bulk ℔ lb.	40	@	41
wrapped fingers, boxes	43	@	45
Codliver oil, Newf'dland ℔ bbl.	70.00	@	80.00
Norwegian	135.00	@	140.00
Collodion, U. S. P.	32	@	34
flex, U. S. P.	39	@	44
Colocynth apples, Spanish ℔ lb.	*80	@	85
Trieste, all whole	20	@	22
pulp, U. S. P.	60	@	65
Corn syrup, 42 deg. ℔ 100 lbs.	2.81	@	—
sugar, brewers' ℔ 100 lbs.	2.81	@	—
Corrosive sublimate, crystals	1.28	@	—
granular, powdered	1.28	@	—
Cotton, soluble	70	@	1.00
Coumarin, refined	9.50	@	10.50
Cresol, U. S. P., gal	1.56	@	1.70
Creosote, beechwood	3.00	@	3.50
carbonate	*7.50	@	8.50
Cuttlefish, Trieste	26	@	28
French	26	@	28
jewelers', large	65	@	70
jewelers', small	52	@	—
Cyanide, chloride mixture	45	@	—
Dover's powder	2.60	@	2.70
Dragon's blood, mass	22	@	60
reeds	80	@	85
Emetine, alk., 15 gr. vials	3.70	@	3.75
Epsom salt, in bags	1¾@		2
in barrels	1¾@		2
Ergot, Russian	70	@	72
Spanish	75	@	80
Ether, U. S. P., 1900	15	@	20
washed	18	@	27
U. S. P., 1880	22	@	28
nitrous, concentrated, 1 to 21	48	@	—
acetic, 95 p. c., carboys	19	@	—
U. S. P., 8th and 7th	50	@	62
Eucalyptol	90	@	1.05
Formaldehyde, 40 per cent	10	@	11
Fusel oil, crude ℔ gal.	4.10	@	4.25
refined ℔ gal.	5.25	@	5.50
Gelatine, silver ℔ lb.	1.00	@	—
gold	*90	@	1.00
Glycerin, C. P., in bulk ℔ lb.	42½@		44
drums and bbls. added			
C. P., in cans	43½@		45
dynamite, drums included	45	@	47
30 degrees, yellow distillate	45	@	47
candle, crude	34½@		35½
soaplye, loose	31½@		32½
saponification, loose	34½@		35½
Glycero-phosphates, calcium	1.70	@	1.75
soda, crystals	2.55	@	2.60
soda, liquor, 15 per cent	1.35	@	1.40
potash liquor, 75 per cent	2.15	@	2.20
Grains of Paradise	Nominal		
Guaiacol, liquid	15.00	@	16.00
Guarana	1.15	@	1.20
Haarlem oil ℔ gross bottles	2.60	@	2.75
Hexamethylene-tetramine	65	@	75
Hydrogen peroxide, per gross	6.50	@	18.00
Hydroquinone	3.50	@	4.00

Hypophosphite, lime	77	@	79
potash	1.50	@	—
soda	82	@	84
Iceland moss	10	@	12
Ichthyol	12.00	@	18.00
Iodine, resublimed	4.25	@	4.30
Iodoform	5.00	@	5.05
Irish moss, ordinary	8	@	10
bleached	11	@	14
Isinglass, Russian	5.25	@	5.50
American	75	@	80
Japanese (see agar agar).			
Kamala, U. S. P.	1.75	@	—
Kola nuts, West Indian	11	@	12
Lac sulphus, domestic	8	@	9
foreign	42	@	45
Lanoline, hydrous	1.00	@	1.05
anhydrous	1.40	@	1.45
Licorice, powder, compound, Syrian, U. S. P.	21	@	—
extract	48	@	50
stick, Corigliano	29	@	48
Lithia, carbonate	1.02	@	1.05
Lupulin	1.35	@	—
U. S. P.	2.25	@	3.00
Lycopodium, U. S. P.	1.65	@	1.70
Magnesia, carb.	19	@	22
calcined	43	@	55
Manganese, glycerophos.	4.50	@	—
hypophosphite	1.90	@	1.75
peroxide	70	@	75
Manna, large flakes	*1.25	@	1.35
small flake	95	@	1.00
Menthol	3.25	@	3.40
Mercury, bisulphate	1.00	@	—
Mercury and chalk	60	@	—
Mercury iodide, green and yellow	4.10	@	—
red	4.20	@	—
Mercurial ointment, 33 1/3 per cent.	61	@	—
50 per cent.	83	@	—
Methylene blue, medicinal	14.00	@	15.00
Milk powder	12	@	14
Musk, pods, Cab.	8.00	@	8.50
Tonquin	13.00	@	15.00
grain, Cab.	12.00	@	15.00
Tonquin	16.00	@	19.00
druggists'	16.00	@	16.50
synthetic	℔ lb. 11.50	@	12.50
Myrbane oil, drums	20	@	22
Naphtha, soluble	35	@	38
Naphthaline balls	8	@	9½
flake	8	@	9½
Nitrate of silver	℔ oz. 43½	@	45½
Nux vomica	7	@	7½
powdered	10½	@	11
Olive oil, edible, Italian	1.50	@	1.60
Orthoform	℔ oz. 1.35	@	—
Oxgall, U. S. P.	1.60	@	—
Papain	3.25	@	3.50
Petrolatum, bbls, light amber	3½	@	4
cream	5¼	@	5½
lily white	7½	@	7¾
snow white	11½	@	11¾
Phenolphthalein	21.00	@	—
Phosphorus, yellow	80	@	—
red	1.00	@	—
Pilocarpine	℔ oz. *18.00	@	20.00
Podophyllin, U. S. P.	2.70	@	2.80
Poppy heads	℔ lb. 75	@	—
Precipitate, red	1.49	@	1.59
white	1.59	@	1.64
Potash, permanganate	1.75	@	2.00
bicarbonate	1.25	@	1.35
cyanide, U. S. P.	1.15	@	1.20
iodide, bulk	3.75	@	3.80
citrate, bulk	1.50	@	—
acetate	1.25	@	1.26
Quassia chips	12	@	14
Quicksilver, flask lots	75.00	@	76.00
jobbing lots	1.15	@	1.15
Resorcin, crystals	℔ lb. 28.00	@	29.00
Rhodol	*6.50	@	6.75
Rochelle salt	34	@	34½
Rosewater, triple, demj.	60	@	—
Russian white paraffine oil, medicinal	℔ gal. 2.50	@	3.00
Saccharin	20.00	@	21.50
Salicine, bulk	9.25	@	10.20
Salol, manufacturers' prices	3.50	@	—
second hand lots	3.30	@	3.50
Santonin, crystals, bulk	35.00	@	40.00
powdered	36.00	@	42.00
Seidlitz mixture	26	@	—
Soda benzoate, granular	℔ lb. 8.00	@	9.00
cyanide	45	@	55
iodide	3.50	@	3.55
nitrite, technical	18	@	21
P. & P.	23	@	24
salicylate	1.70	@	1.75
sulphocarbolate	95	@	98
Soluble cotton	80	@	1.00
St. John's bread	3½	@	4
Strontium, carbonate, tech	16	@	18½
pure	45	@	50
nitrate	32	@	35
Strychnine, alkaloid	1.08	@	—
sulphate	90	@	96
acetate	1.10	@	1.20
nitrate	1.10	@	1.15
phosphate	1.25	@	1.30
Sugar coloring (caramel), in bbls.	℔ gal. 53	@	60
Sugar of milk, powdered	23	@	24
Sulfonal, 100-oz lots	50	@	1.15
Sulphomethylmethane, U. S. P.	15.00	@	16.00
Sulphonmethane, U. S. P.	13.50	@	14.50
Sulphur, roll	1.95	@	2.25
flour	2.10	@	2.50
flowers	2.30	@	2.70
Tamarinds	℔ lb. 3¾	@	4
in kegs	℔ keg 2.25	@	2.50
Tartar emetic, in casks	℔ lb. 55	@	55½
U. S. P.	61	@	65
Terpinol, C. P.	75	@	85
Terpinhydrate	50	@	55
Thymol	9.50	@	10.00
Thymol, iodide, os	61	@	62
Toluol, pure, gal.	3.00	@	3.25
90 per cent., gal.	2.25	@	2.50
Trional	60	@	1.30
Vanillin	℔ oz. 55	@	60
Venice, turpentine, art.	11	@	12
true	3.00	@	—

*Nominal.

ACIDS.

Benzoic, true	℔ lb. *11.50	@	12.00
ex toluol	*11.50	@	12.00
Boric, crystals, or granulated, sacks		11¾	@ 12¼
powdered, sacks		12	@ 12½
crystals, granulated or powdered, bbls.		11¼	@ 15
Butyric, tech (60 per cent.)		1.45	@ 1.55
Camphoric		4.20	@ 4.30
Carbolic, U. S. P., crystals, dms.		55	@ 60
bottles, pound		63	@ 65
Chrysophanic		6.20	@ 6.40
Cinnamic		4.90	@ 5.20
Citric, crystals, domestic, mfgrs.		67	@ 67½
in second hands		62	@ 63
Cresylic, 95@100 per cent.	℔ gal.	75	@ 80
Gallic, U. S. P.		1.28	@ 1.30
Picric		1.00	@ 1.25
Phosphoric, S. G., 1,750		30	@ 34½
S. G., 1,710		29½	@ 64
Pyrogallic, resub.		2.90	@ 3.20
Salicylic		1.65	@ —
Tannic, U. S. P., bulk		1.00	@ 1.01
technical		65	@ 80

*Nominal.

BALSAMS.

Copaiba, South American	℔ lb.	63	@ 65
Para		52½	@ 55
Fir, Canada	℔ gal.	5.00	@ —
Oregon		75	@ 85
Peru	℔ lb.	3.50	@ 3.75
Tolu		36	@ 38

BARKS.

Angostura	℔ lb.	30	@ 32
Basswood		18	@ 22
Bayberry		6	@ 7
Blackberry, of root		6½	@ 8
Black haw of root		13½	@ 14
of tree		9½	@ 10½
Buckthorn, true		30	@ 35
Calisaya		19	@ 28
Canella, alba		18	@ 20
Cascara sagrada		7¾	@ 10
Cascarilla quills, long		28	@ —
quills, small		22	@ —
siftings		12	@ 15
Cinchona, red, quills		35	@ 40
broken		30	@ 35
yellow quills		30	@ 35
broken		30	@ 35
Loxa, pale, bales		25	@ 26
Loxa, pale, pwd., bxs.		18	@ 18½
Maracaibo, yellow, pwd.		*30	@ 35
Condurango		19	@ 20
Cottonroot		7½	@ 8
Cramp		6	@ 7
Dogwood, Jamaica		6	@ 7
Elm, bundles, select		16	@ 17
grinding		14	@ 15
Lemon peel		5	@ 6
Mezereon		25	@ 30
Oak, red		8	@ 9
white		3	@ 5
Orange peel, bitter, Curacao, ¼s		4	@ 5
sweet, Malaga, ribbons		6½	@ 7
quarters		*12	@ —
sweet, Trieste		—	@ 10
Prickly ash		10	@ 12
Pomegranate		25	@ —
of fruit		30	@ —
Quebracho		50	@ —
Sassafras, ordinary		11	@ 17
select		15	@ 16
Simarubra		15	@ 18
Soap, whole		8	@ 8½
cut		15	@ 16
crushed		9½	@ 11
Tonga		40	@ —
Wahoo of root		29	@ 33
of tree		12	@ 15
Wild cherry		6	@ 8
Witch hazel		3½	@ 4
White pine		4½	@ 5
White poplar		4	@ 5

*Nominal.

BEANS.

Calabar	℔ lb.	22	@ 25
St. Ignatius		18	@ 20
Tonka, Angostura		85	@ 90
Para		50	@ 55
Surinam, crystallized		60	@ 65
Vanilla, Mexican, whole		5.00	@ 7.00
cuts		3.75	@ 4.25
Bourbon		2.80	@ 3.50
South American		3.25	@ 3.50
Tahiti, white label		*1.75	@ 1.85
green label		1.60	@ 1.65

*Nominal.

BERRIES.

Cubeb, ordinary	℔ lb.	42½	@ 45
XX		47½	@ 50
powdered		45	@ 50
Fish (cocculus indicus)		4½	@ 5
Horse nettle, dry		12½	@ 13
Juniper		4¼	@ 4½
Laurel		5	@ 6
Prickly ash		12	@ 14
Saw palmetto		6	@ 8
Sloe		70	@ 75

ESSENTIAL OILS.

Almond, bitter	℔ lb.	*13.00	@ 15.00
artificial		6.50	@ 8.00
sweet true		85	@ —
peach kernel		35	@ 37½
Amber, crude		Nominal	
rectified		Nominal	
Angelica		35.00	@ —
Anise		1.00	@ 1.15
Bay		2.50	@ 2.75
Bergamot		5.50	@ 5.75
synthetic		2.90	@ 3.00
Birch tar, crude		Nominal	
refined		85	@ 90
Bois de rose		3.50	@ 3.75
Cade		50	@ 55
Cajeput		75	@ 85
Calamus		3.25	@ —
Camphor, heavy gravity		12	@ 13
Japanese, native		16	@ 18
Canaga, native		3.25	@ 3.30
rectified		4.75	@ 4.80
Capsicum oleoresin, lb. lots		4.50	@ —
Caraway		3.10	@ 3.25
Carvol		5.75	@ 6.00
Cassia, 75@80 per cent. technical		1.05	@ 1.10
lead free		1.30	@ 1.35
lead free, U. S. P.		1.50	@ 1.60
redistilled		1.65	@ 1.70
Cedar leaf		90	@ 95
wood		15	@ 16
Cinnamon, Ceylon, heavy		20.00	@ —
Citronella, Ceylon, drums		50	@ 51
cans		51	@ 52
Java		85	@ 87½
Cloves, cans		1.25	@ —
bottles		1.27½	@ —
Copaiba		1.00	@ 1.10
Coriander		9.75	@ 10.00
Croton		95	@ 1.00
Cubeb		3.25	@ —
Cumin		4.00	@ 4.25
Dill		4.25	@ 4.50
Erigeron		1.00	@ 1.05
Eucalyptus, Australian		65	@ 70
Fennel seed, sweet		4.50	@ 5.50
Geranium, Turkish		3.50	@ 4.00
rose, Africa		3.50	@ 3.75
Bourbon		3.25	@ 3.50
Ginger		6.50	@ 7.00
Gingergrass		1.75	@ 2.00
Hemlock		55	@ 57½
Juniper berries, rectified		8.50	@ —
twice rectified		*8.50	@ —
wood		1.25	@ 1.40
Lavender flowers		3.90	@ 4.25
Spike		1.20	@ 1.40
garden		60	@ 80
Lemon		1.00	@ 1.05
Lemongrass		80	@ 85
Limes, expressed		3.15	@ 3.25
distilled		3.75	@ 3.80
Linaloe		2.85	@ 3.00
Mace, distilled		1.05	@ 1.10
expressed		1.05	@ 1.10
Malefern		9.00	@ 9.50
Mustard, natural		20.00	@ 21.00
artificial		19.00	@ 20.00
expressed		90	@ 95.00
Neroli, petale		45.00	@ 50.00
bigarade		35.00	@ 50.00
synthetic		*18.00	@ 20.00
Niobe		3.50	@ —
Nutmegs		1.05	@ 1.10
Orange, sweet, Italian		3.00	@ 3.10
West Indian		2.75	@ 2.80
bitter		2.25	@ 2.75
Origanum		18	@ 25
Patchouli		13.00	@ 15.00
Pennyroyal, American		1.65	@ 1.85
French		1.25	@ 1.30
Peppermint, tins		2.30	@ 2.40
one brand in bottles		2.85	@ 2.90
Petit grain, French		6.00	@ 6.50
South American		2.75	@ 3.00
Pimento		1.75	@ 1.80
Pine needles		85	@ —
Rose, natural	℔ oz.	13.00	@ 14.25
artificial		2.50	@ 3.00
Rosemary flowers, French	℔ lb.	75	@ 85
Safrol		40	@ 45
Sandalwood, East India		7.75	@ —
West Indies		3.25	@ 3.50
Sassafras, natural		70	@ 75
artificial		27	@ 28
Savin		Nominal	
Spearmint		1.90	@ 2.00
Spruce		80	@ 90
Tansy		2.25	@ 2.80
Terpineol		75	@ 85
Thyme, red, French		1.80	@ 1.90
white, French		1.50	@ 1.75
Wintergreen (sweet birch)		2.50	@ 2.75
synthetic		1.65	@ —
leaf (gaultheria)		2.25	@ 2.40
Wormseed, Baltimore		2.40	@ 2.50
Wormwood		2.90	@ 3.00
Ylang ylang, Manila		30.00	@ 35.00
Bourbon		10.00	@ 15.00

*Nominal

FLOWERS.

Arnica	60	@	65
Borage	90	@	1.00
Calendula, German	1.00	@	—
Chamomile, Roman	50	@	52½
Hungarian	55	@	60
Italian	35	@	40
Clover tops	14	@	18
Elder	15	@	16
Insect, open	*50	@	—
closed	*55	@	—
powdered flowers and stems	26	@	28
powdered, flowers	40	@	45
Kusso	*55	@	60
Lavender, ordinary	16	@	18
select	22	@	30
Linden, with leaves	35	@	40
without leaves	1.00	@	—
Malva, blue	1.20	@	1.25
black	30	@	50
Mullein	*3.00	@	—
Orange	1.00	@	—
Ox-eye, daisy	5½	@	—
Patchouli	36	@	41
Poppy, red	50	@	55
Rosemary	*45	@	50
Saffron, American	1.40	@	1.45
Valencia	11.00	@	11.25

*Nominal.

MEDICINAL AND OTHER GUMS.

Aloes, Curacao, cases	℔ lb.	9	@ 9¾
in gourds		25	@ 27
Barbadoes, true		1.00	@ 1.10
Cape		8½	@ 9
Socotrine		21	@ 25
Ammoniac, tears		25	@ 30
Arabic, firsts		30	@ 35
seconds		28	@ 30
thirds		25	@ 28
sorts, amber, cleaned		15	@ 17
white		25	@ 30
Asafœtida, lump		85	@ 90
powdered		1.00	@ 1.15
Benzoin, Siam		1.50	@ 1.75
Sumatra		33	@ 40
Camphor, Am., ref'd, bbls., bulk		60½	@ —
cases of 100 blocks		70	@ —
squares of 4 ozs.		70½	@ —
10s in 1-lb. cartons		72	@ —
24s and 32s in 1-lb. cartons		72	@ —
Japan, refined, 2½-lb. slabs		71½	@ 72
1-lb. blocks		71½	@ 72
oz. tabs		72	@ 73
24s and 32s		74	@ 75
Chicle		60	@ 65
Euphorbium		20	@ —
Galbanum		75	@ 85
Gamboge, mass and pipe		1.25	@ 1.30
powdered		1.35	@ 1.50
Gualac		25	@ 30
Kadaya, whole		12	@ 18
powdered		16	@ 25
Kino		50	@ 60
Mastic		40	@ 41
Myrrh, select		25	@ —
sorts		20	@ 22
siftings		20	@ —
Olibanum, siftings		12	@ 12½
strained		35	@ —
tears		11	@ 12
Sandarac		25	@ 25½
Scammony, resin		2.50	@ 2.75
Aleppo		3.00	@ 3.25
Virgin		3.50	@ 6.50
Senegal, picked		22	@ 24
sorts		18	@ 20
Spruce		65	@ 90
Styrax, liquid, cs		1.50	@ 1.75
Thus		8.00	@ 8.50
Tragacanth, Aleppo, firsts	℔ lb.	2.20	@ 2.30
seconds		2.00	@ 2.10
thirds		*1.40	@ 1.60
sorts		*50	@ 60
Turkey, firsts		*2.75	@ —
seconds		*2.25	@ —
thirds		*2.00	@ —

*Nominal.

HERBS AND LEAVES.

Aconite	℔ lb.	15	@ 16
Bay, true		1.00	@ —
Boneset		5	@ 6
Buchu, short		1.20	@ 1.25
long		1.25	@ —
Belladonna		1.50	@ 1.75
Cannabis indica, tons		2.75	@ —
Chiretta		30	@ —
Coca, Huanoco		—	@ —
Truxillo		38	@ 40
Coltsfoot		20	@ 22
Conium		20	@ —
Corn silk		—	@ —
Damiana		12	@ 13
Deer tongue		Nom	
Digitalis, domestic		40	@ —
Spanish		30	@ 35
Austrian		55	@ 60
Eucalyptus		6	@ 7
Euphorbia pilulifera		24	@ 25
Grindelia robusta		6½	@ 8
Hehbane, German		Nominal	
Russian		1.35	@ 1.40
Henna		11	@ 12
Horehound		18	@ 20
Jaborandi		18	@ 20
Laurel		5½	@ 6½
Liverwort		21	@ 25
Lobelia		7½	@ 8½
Matico		23	@ 30
Marjoram, German		45	@ 52
French		19½	@ 20
Pennyroyal		5	@ 8
Peppermint, American		14	@ 16
German		35	@ 40
Pichi		12	@ 14
Pulsatilla		4.00	@ 5.00
Prince's pine		8	@ 10
Rose, red		1.40	@ 1.65
Rosemary		6	@ 7
Rue		40	@ 50
Sage, Austrian, stemless		*50	@ 55
grinding		*45	@ 50
Greek		8½	@ 9
Spanish		8	@ 9
Savory		17½	@ 17¾
Sidiritis, cut		14	@ 16
Skullcap, U. S. P.		15	@ 16
Senna, Alex. whole leaf		70	@ 75
half leaf		55	@ 60
siftings		43	@ 45
powdered		40	@ 42
Tinnevelly		22	@ 30
powdered		26	@ —
pods		30	@ 35
Spearmint, American		20	@ 22
Squaw vine		8	@ 10
Stramonium		18	@ 18½
Tansy		8	@ 10
Thyme		11¼	@ 11½
Uva ursi		5¾	@ 6
Witchhazel		4	@ 5
Wormwood, foreign		25	@ 30
Yerba santa		7½	@ 8½

*Nominal.

ROOTS.

Aconite	℔ lb.	65	@ 70
Alkanet		75	@ 80
Althea, whole		30	@ 32
cut		42	@ 44
Angelica, German		15	@ 20
American		14	@ 16
Arnica, Montana		55	@ 65
Arrowroot, Bermuda		42	@ 46
St. Vincent, bbls.		6½	@ 7
Belladonna, atropa		2.75	@ 5.00
Berberis aquifolium		10	@ 11
Beth		20	@ 25
Bitter		22	@ 24
Blood		9	@ 9½
Bluflag		12	@ 14
Bryonia		40	@ 50
Burdock		25	@ 40
Calamus, bleached		2.00	@ 2.50
unbleached		22	@ 28
Cohosh, black		4½	@ 5
blue		4½	@ —
Colchicum		2.00	@ 2.10
Colombo		10	@ —
Coltsfoot		9	@ —
Dandelion, German		32	@ —
domestic		27	@ —
Dog grass		1.40	@ —
Echinacea		30	@ —
Elecampane		11	@ —
Galangal		10	@ —
Geranium		6	@ —
Gelseminum		4½	@ —
Gentian		18	@ —
Ginger, Jamaica, unbleached		16	@ —
bleached		21	@ —
Ginseng, wild, Southern		6.25	@ —
Northwestern		6.50	@ —
Eastern		6.25	@ —
cultivated		4.25	@ —
Golden seal		5.50	@ 5.60
powdered		5.65	@ 6.00
Hellebore, white		40	@ —
black		15	@ —
powdered, white		25	@ —
Ipecac, Cartagena		1.85	@ —
Rio		3.00	@ —
Jalap		10	@ —
Kava kava		10	@ —
Lady Slipper		35	@ —
Licorice, Spanish, in bales		15	@ —
selected		25	@ —
powdered		19	@ —
Russian, peeled and cut		45	@ —
Syrian		15	@ —
Lovage, American		50	@ —
German		30	@ —
Manaca		30	@ —
Mandrake		7	@ —
Musk, Russian		2.00	@ —
Orris, Florentine, bold		16	@ —
small		14	@ —
Verona		12	@ —
fingers		1.50	@ 1.75
Pareira brava		30	@ —
Pellitory		35	@ —
Pink, true		36	@ —
Pleurisy		12	@ —
Poke		5	@ —
Rhatany		30	@ —
Rhubarb, Shensi		80	@ —
high dried		17	@ —
cuts		60	@ —
Sarsaparilla, Honduras		38	@ —
Mexican		16	@ —
Senega, Northwestern		62	@ —
southern		60	@ —
Serpentaria		32	@ —
Skunk cabbage		10	@ —
Snake, Canada		18	@ —
Spikenard		10	@ —
Squills white		13	@ —
powdered		28	@ —
Stillingia		5	@ —
Stone		6	@ —
Unicorn, false (helonias)		32	@ —
true (aletris)		19	@ —
Valerian, Belgian		80	@ —
Japanese		25	@ —
English		*10	@ —
Wild yam		6	@ —
Yellow dock		10	@ —
Zodeary		15	@ —

*Nominal.

SEEDS.

Anise, Spanish	℔ lb.	17	@ —
star, actual weight		22	@ —
Levant		12½	@ —
Italian		17	@ —
Canary, Spanish		5½	@ —
Smyrna		*7	@ —
South American		4	@ —
Dutch		5	@ —
Caraway		20½	@ —
Cardamoms, bleached		85	@ —
decorticated		60	@ —
Celery		22	@ —
Colchicum		1.25	@ 1.30
Conium		18	@ —
Coriander, natural		9½	@ —
bleached		10½	@ —
Cumin, Malta		*20	@ —
Mogador		21	@ —
Dill		15½	@ —
Fennel, German, large		60	@ —
small		20	@ —
French		11½	@ —
Roumanian		18	@ —
Flax, whole	℔ lb.	9.75	@ —
Foenugreek		7	@ —
Hemp, Manchurian		6	@ —
Russian		*6½	@ —
Job's tears, white		6	@ 7
Larkspur		20	@ —
Lobelia		27	@ 28
Millet, natural		3.00	@ 3.15
hulled		5½	@ 7
Mustard, Bari, brown		14	@ —
California, brown		11½	@ 12
Sicily, brown		13½	@ —
Trieste, brown		—	@ —
English, yellow		12½	@ 13
Dutch, yellow		13	@ —
Parsley		21	@ 22
Poppy, Dutch		29	@ —
India		26½	@ —
Russian		27½	@ —
Pumpkin		11	@ —
Quince		75	@ 80
Rape, English		9	@ —
Bulgarian		8½	@ —
Japanese		5½	@ —
Saladilla		22	@ —
Staversacre		8½	@ —
Stramonium		10	@ —
Strophanthus, Kombe		2.25	@ —
Hispidus		Nominal	
Sunflower, large		5½	@ —
small		4½	@ —
Worm, Levant		85	@ —
American		9	@ —

*Nominal.

SPICES.

Cassia, Batavia, No. 1	℔ lb.	20	@ —
shortstick		16	@ —
Batavia, No. 2		15½	@ —
No. 1, Saigon rolls		40	@ —
China, cs		12½	@ —
broken, extra		8½	@ —
buds		15	@ —
Chillies, Japan		30	@ —
Mombassa		31	@ —
Cinnamon, Ceylon, No. 1		25	@ —
No. 2		24	@ —
No. 3		23	@ —
Cloves, Amboyna		26½	@ —
Zanzibar		18	@ —
Penang		30	@ —
Ginger, Cochin, "A, B, C"		10	@ —
Cochin, "D"		11½	@ —
Africa, No. 1		9½	@ —
Japan		7½	@ —
Mace, Banda		63	@ —
Penang, No. 1		62	@ —
Penang, No. 2		58	@ —
No. 2 Batavia		51	@ —
Nutmegs, 105s to 110s		19½	@ —
75s to 80s		24½	@ —
grinding		10	@ —
Paprika, Spanish		16½	@ —
Hungarian		*50	@ —
Pepper, black, Singapore		17½	@ —
Acheen		16½	@ —
Alleppy		18½	@ —
Lampong		17	@ —
Tellicherry		18½	@ —
white Singapore		21½	@ —
Penang		21	@ —
Pimento		5½	@ —

*Nominal.

WAXES.

Bayberry	℔ lb.	21	@ —
Beeswax, white, pure		40	@ —
yellow, crude		30	@ —
yellow, refined		35	@ —
Candelilla		23	@ —
Carnauba, flor		50	@ —
No. 1		43	@ —
No. 2, regular		38	@ —
No. 2, North Country		33	@ —
No. 3		27½	@ —
No. 4, North Country		23½	@ —

Green, yellow	10	@	13
white	14	@	16
Japan	14½	@	15
Linseed, crude	*25	@	30
bleached	—	@	38
Rubberite, crude, brown	45	@	60
green	80	@	90
refined, white	*75	@	80
refined, yellow	*60	@	65
Mineral, American	35	@	—
Paraffine, crude, 103@105 deg. m. p.	4	@	4½
118@120 deg. m. p.	5	@	—
124@126 deg. m. p.	5½	@	5½
refined, domestic, 118@120 deg. m. p.	6½	@	7
125 deg. m. p.	7½	@	—
128 deg. m. p.	8½	@	9
133@135 deg. m. p.	9½	@	12
140 deg. m. p.	13	@	—
refined, foreign, 125 m. p.	*6	@	7
130 m. p.	*7	@	8
135 m. p.	*8	@	9
140 m. p.	*8½	@	9
Spermaceti, block	24	@	25
cakes	25	@	26

* Nominal.

HEAVY CHEMICALS.

Bleach	4½	@	6
Salt cake	55	@	65
Soda ash, 48 per cent., in bags, f. o. b. works, per 100 lbs.	—	@	—
light 58 per cent., in bags, flat, per lb.	3¼	@	3½
Soda, bicarb., English	3½	@	3¾
Soda, bicarb., American, f. o. b. works	1.65	@	1.75
Soda caustic, domestic, f. o. b. works	3½	@	4¼
74@76 per cent., in drums, ground, 76 per cent.	4	@	—
flake, 76 per cent.	5	@	5¼
Sal soda, American, f. o. b. works	1.00	@	1.15
Sulphide of soda, 30 per cent. crystals, in barrels	2	@	2¼
60 per cent. fused or broken, iron barrels	3	@	3½

ACIDS.

Acid, acetic, 28 p. c., in bbls.	4½	@	5
56 per cent.	10½	@	11
glacial acetic, 99 per cent., carboys	27	@	28
hydrofluoric, 30 per cent., in bbls.	5	@	5½
48 per cent., in carboys	11	@	—
52 per cent., in carboys	19	@	—
lactic acid, 22 per cent.	4½	@	—
44 per cent.	10	@	—
oxalic	60	@	62
phosphoric, 50 per cent.	11	@	12
prussic, 2 per cent.	1	@	1½
96 deg.	1½	@	2
battery acid, carboys	—	@	3
oleum, tank cars	2¼	@	2½
muriatic, 18 deg. in carboys	1¾	@	2
20 deg.	2	@	2¼
22 deg.	2¼	@	2½
Aqua fortis, 36 deg., in carboys	6	@	6¼
38 deg.	6¼	@	6½
40 deg.	6½	@	6¾
42 deg.	6¾	@	7
nitric, 36 deg., in carboys	6¼	@	6½
38 deg.	6½	@	6¾
40 deg.	6¾	@	7
42 deg.	7	@	7½
tartaric crystals	66	@	70
powdered	65	@	—

MISCELLANEOUS CHEMICALS.

Acetate of lime	100 lbs. 3.50	@	3.55
Acetate of lead, brown broken	11½	@	—
white crystals	13½	@	—
white broken	12½	@	—
white granular	13½	@	—
Alum, lump	4	@	4¼
ground	4½	@	4¾
Anhydrous ammonia	—	@	25
*Antimony, needle glassmakers' grade	20	@	—
*Antimony oxide	25	@	—
Aqua ammonia (in dms.), 16 deg.	lb.	2¾	@ 3½
18 deg.		3½	@ 4½
20 deg.		4	@ 5
Ammoniac, gal. gray		10	@ 15
granulated, white		—	@ 10½
lump		18	@ 20
Arsole		2¼	@ 18
Arsenic, white		5½	@ 6
red		6½	@ 7c
Arsenate of lead		8½	@ 9
Barium chloride		5	@ 5½
Bichromate, long ton		—	@35.00
Carbonate of copper		32	@ 34
Carbon tetrachloride, in drums		16	@ 16½
Cream tartar, crystals	lb.	—	@ 40
powdered, 99 per cent.		—	@ 40
Chlorate of soda		28	@ 35
Chloride of calcium, 70@75 per cent., fused		26.60	@31.00
Copperas		1¼	@ 1½
Glauber's salt		60	@ 65
Nitrate of lead		15½	@ 16
Potash, chlor., crys.		48	@ 50
powdered		48	@ 50
carb., calcined, 80@85 p. c.		50	@ —
calcined, 90@95 per cent.		90	@ —
hydrated, 80@85 per cent.		70	@ —
caustic, 88@92 per cent.		85	@ 90
Saltpeter, crude		—	@ —
refined		28	@ 30
Sulphate, alumina, low grade		4	@ 4½
high grade		5	@ 6½
Bisulphite of soda, powdered		5½	@ 5¾
Tin, oxide		44	@ 46
Verdigris		36	@ 37
Blue vitriol		8½	@ 10¼
Zinc, carbonate		24	@ 26
chloride		13	@ 14
sulphate		6½	@ 7

* Nominal.

AMMONIATES.

Ammonia, sulph., prompt	4.00	@	—
futures	4.00	@	—
Fish scrap, dried, 11 p. c. ammonia and 14 p. c. bone phosphate, f. o. b. delivered Balto.	unit	3.00	& 10
wet, acidulated, 6 p. c. ammonia, 3 p. c. phosphoric acid, delivered		Nominal	
Ground fish guano, imported, 10 and 11 p. c. bone phosphate, c. i. f. N. Y., Balto. or Phila.		—	@ —
Tankage, 11 p. c. and 15 p. c. f. o. b. Chicago		3.15	& 10
Tankage, 10 and 20 p. c., f. o. b. Chicago, ground		3.05	& 10
Tankage, 9 and 20 o. c., f. o. b. Chicago, ground		3.15	& 10
Tankage, concentrated, f. o. b. Chicago, 14 to 15 p. c., f. o. b. Chicago		2.90	& 10
Garbage, tankage, f.o.b. Chicago		9.00	@ —
Sheep manure, concentrated, f. o. b. Chicago	ton.	13.00	@ —
Hoofmeal, f. o. b. Chicago	unit	2.60	@ 2.70
Dried blood, 12-13 p. c. ammonia, f. o b. New York		3.35	@ —
Chicago		3.20	@ —
Nitrate of soda, 95 p. c., spot	100 lbs.	2.90	@ 2.95
futures, 95 p. c.		2.90	@ 2.95

PHOSPHATES.

Acid phosphate	ton.	10.50	@12.00
Bones, rough, hard	ton.	22.50	@24.00
soft steamed unground		21.50	@22.00
ground, steamed, 1¼ p. c. ammonia and 60 p. c. bone phosphate		20.00	@21.00
ditto, 3 and 50 p. c.		23.50	@24.00
raw, ground, 4 p. c. ammonia and 50 p. c. bone phosphate		28.50	@30.00
South Carolina phosphate rock, kiln dried, f. o. b. Ashley River		3.50	@ 3.75
Florida land pebble phosphate rock, 68 p. c., f. o. b. Tampa, Fla.		2.75	@ 3.00
Florida high grade phosphate hard rock, 77 p. c., f. o. b. Florida ports		5.00	@ 5.25
Tennessee phosphate rock, f. o. b. Mt. Pleasant, domestic, 78@80 p. c.	ton	5.00	@ 5.50
75 p. c. guaranteed		4.75	@ 5.00
68@72 p. c.		4.25	@ 4.50

POTASHES.

Muriate of potash, 80-85 per cent., basis 80 per cent., in bags	ton.	400.00	@420.00
Muriate of potash, min. 95 per cent., basis 80 per cent., in bags	ton.	375.00	@ —
Muriate of potash, min. 98 per cent., basis 80 per cent., in bags		Nominal	
Sulphate of potash, 90-95 per cent., basis 80 per cent., in bags		275.00	@300.00
Double manure salt, 48-53 per cent., basis 48 per cent., in bags		105.00	@ —
Manure salt, min. 20 per cent., K_2O, in bulk		50.00	@60.00
Hardsalt, min. 16 per cent., K_2O, in bulk		40.00	@50.00
Kainit, min. 12.4 per cent. K_2O, in bulk		40.00	@50.00

PYRITES.

Spanish crude, unwashed fines, per unit, averaging 48@52 p. c. of sulphur, ex ship		16	@ 16½
Spanish smalls, washed fines		16	@ 16½
Furnace size lump ore, washed, averaging 48@52 p. c. of sulphur		—	@ 15¼
Spanish lump, washed		—	@ 15¾
Furnace size, high grade, practically non-arsenical; less than 1-16 p. c. arsenic		16	@ —
Lump, unbroken, Spanish ore		—	@ 16
Domestic concentrates, f. o. b. mill		11	@ 12

DYESTUFFS.

Acetate of soda		10½	@ 11
tannic, commercial		90	@ 95
crystals		76	@ 77
Albumen, egg		72	@ 75
blood		30	@ 37
Alizarine, red		—	@ —
Alumina, chloride		4	@ 4.10
Aniline oil		27	@ 30
salts		40	@ 55
Annatto, fine		45	@ 60
seed		15	@ 16
Antimony, salt, 75 per cent.		50	@ *60
65 per cent.		45	@ *50
47 per cent.		40	@ *45
Bichloride of tin, 50 deg.		13½	@ 14
Bichromate of potash		38	@ 50
Bichromate of soda		26	@ 29
Cochineal, Teneriffe, silver		95	@ 98
roxy, black		85	@ 90
gray black		75	@ 80
Fine Madras		—	@ —
Cudbear, French		70	@ 80*
concentrated		75	@ 85*
English		20	@ 25
Cutch, bales		9	@ 15
boxes		12	@ 16
Dextrine, imported potato		12	@ 13
British gum		3.65	@ 3.71
domestic potato		8	@ 10
Divi divi		50.00	@55.00
Flavine	lb.	1.25	@ 1.50
Fustic, stick	ton.	30.00	@35.00
young root		—	@45.00
Gambier, spot, ex store	lb.	9½	@ 10
Hypo, of soda, bbls.	cwt.	2.00	@ 2.25
kegs		2.15	@ 2.30
Indigo, Bengal	lb.	3.50	@ 5.00
Kurpahs		—	@ —
Guatemala		3.00	@ 4.50
Madras		2.50	@ —
J. (synthetic)		1.35	@ —
Logwood, stick		35.00	@45.00
roots		40.00	@ —
Madder, Dutch	lb.	28	@ 30
Myrabolanes		32.00	@55.00
Nitrate of iron, commercial		2½	@ 3
true		5	@ 6
Nutgalls, blue Aleppo		35	@ 50
Chinese		18	@ 20
Persian berries		—	@ —
Phosphate of soda, com.		7	@ 8
Prussiate of soda		45	@ 55
Prussiate of potash, yellow		65	@ 75
red		1.75	@ 2.00
Quercitron	ton.	75.00	@80.00
Sago flour	lb.	4¾	@ 5
Silicate of soda, liquor		1	@ 1½
crystals		2	@ 3
Soluble oil, 50 per cent.		10	@ 12
75@85 per cent.		14	@ 16
Starch, corn, pearl		2.65	@ 2.71
potato		8	@ 8½
rice		8	@ 10
wheat		5	@ 6
Sumac, Sicily, No. 1 (29 per cent tannic acid) shipment		68.00	@ —
Tin crystals		29½	@ 30
Turmeric, Madras		8¾	@ 9
Aleppy		—	@ —
Pubna		—	@ —
China		8½	@ 8¾
Cochin, bulbs		—	@ —
Turkey red oil		10	@ 24
Zinc dust		22	@ 30

CHIPPED DYEWOOD.

Barwood	lb.	6	@ 8
Camwood		18	@ 20
Fustic		6	@ 7
Hypernic		7	@ 8
Logwood		4	@ 5
Red sanders		12	@ 14

EXTRACTS

Archil, double	lb.	35	@ —
concentrated		45	@ —
Barberry, French		35	@ 40
Chestnut		5	@ 6
Oak		6	@ 8
Hemlock		5½	@ 6
Fustic, solid		35	@ 40
liquid, 51 deg.		22	@ 26
Gall		16	@ 20
Indigo		30	@ 45
Logwood, solid		45	@ 50
liquor, 51 deg.		30	@ 45
42 deg.		25	@ —
crystals		55	@ 60
Quebracho, solid		14	@ 16
51 deg.		7	@ 8
42 deg.		6½	@ —
Quercitron		11	@ 12
Rochelle salts		4	@ 5*
Persian berry		20	@ 25
Sumac		7	@ 13¾

* Nominal.

COMPARATIVE PRICES OF PRINCIPAL ARTICLES.

The prices of the following principal articles at the close of the market on the corresponding date of the three previous years will be of interest:—

CHEMICALS.	1915.	1914.	1913.
Bleaching powder, over 35 p. c.	$0.02½	$0.02¼	..
Brimstone, crude, long ton	22.00	22.00	22.00
Caustic soda, 74-76 p. c.	.05¼	..	..
Sal soda, Am.	.00	.00	.00
Soda, bicarb., Am.	1.00	1.00	1.00
Soda alkali, 48 p. c.	.75	.67½	.67½
Soda nitrate, 96 p. c., spot	2.55	1.90	2.35
Cream tartar, crystals	.34½	.38	.24½
Muriate of potash, 80 p. c., 2,000 lbs.	245.00	39.57	38.05
Potash chlorate, crystals, f. o. b. works	.35½	.15	.08¼
Kainit, min., 12.4 p. c., 1.16 p. c. arsenic	40.00	8.56	8.45
Caustic potash, 90 p. c.	.39	.17½	..
Oxalic acid, in casks	.41	.18	..
Chlorate soda	.14	.14	..
PAINTS.			
White lead in oil, 100 lbs. or over	.06¾	.06¾	.07½
Litharge, Am. powd.	.06	.05¼	.06¾
Paris green, bulk, kegs	.13	.11	.12
Orange mineral, Am.	.08¾	.07½	.08¼
Venetian red, American	.75	1.15	1.15
Barytes, white prime, foreign	19.00	19.00	19.00
Whiting, commercial	.50	.45	.45
DRUGS.			
Opium, jobbing lots, lbs	8.25	10.00	5.75
Morphine, bulk, oz.	5.00	5.30	4.20
Quinine, 100-oz. tins	.40	.31	.28
Alcohol, 190 U. S. P.	2.56	2.62	2.51
Borax, crystals, bbls.	.05¼	.04¼	.04
Belladonna leaves	1.50	2.50	..
Belladonna atropa root	1.75	1.00	..
Caffeine alkaloid	10.25	5.00	..
Cocaine, crystals	3.50	5.00	..
Glycerine, C. P., bulk	.24½	.24½	.20¾
Oil, codliver, N'wegian	82.50	19.00	25.00
Naphthaline, ball	.13	.03½	..
Epsom salt, bags	.04½	.02½	..
Carbolic acid, U. S. P., crystals, dms	1.50	.38	..
Oil, peppermint, bottles	2.45	3.00	3.00
Oil, wintergreen, synthetic	2.35	1.15	..
Quicksilver, jobbing lots	1.25	1.05	..
Quicksilver, flask lots	89.00	65.00	..
Gum arabic, sorts, amber	.16	.19	.08¼
Camphor, ref., bbls., Am.	.42	..	.42½
Potash, permanganate	1.25	.55	..
Saccharine	8.50	4.50	..
Senna, Tinnevelly	.25	.15	..
Ipecac, Rio	4.00	2.25	2.10
Canary seed, Smyrna	.03¾	.08¼	.06¾
Caraway seed	.09¾	.08¼	..
Celery seed	.35	.23	..
Soda, salicylate	3.35	1.15	..
Thymol	12.00	9.00	..
OILS.			
Cottonseed, prime yellow, summer	.0691	.05½	.07⅛
Olive, denatured	.85	1.00	.83
Oceanut, Ceylon, lb.	.09	.12½	.11
Lard, prime winter	.84	.92	.95
Linseed, 5-bbl. lots	.56	.50	.48
Sperm, bleached winter, cold test, 38 deg.	.70	.70	.72
Whale, bleached winter	.50	.50	.52
DYESTUFFS.			
Bichromate, potash	.20	.13	.06¾
Cochineal, Teneriffe, gray black	.60	.60	..
Cutch, bales	.12	.06½	.04¾
Gambier, spot, store, lb.	.11	.06½	.04½
Bichromate, soda	.16	.04¾	..
Prussiate, soda	.41	.20	..
Aniline oil	.95	.45	..
Indigo, Bengal	3.00	..	.80
Prussiate potash, yellow	.82½	.36	.15¾
Starch, corn, bags	2.15	2.29	2.34
Sumac, Sicily, 28 p. c.	65.00	100.00	65.00
MISCELLANEOUS ITEMS.			
Spirits of turpentine	.41	.48	.41½
Rosin, com., strained, lb.	3.55	3.75	..
Linseed cake, domestic	37.00	..	28.00

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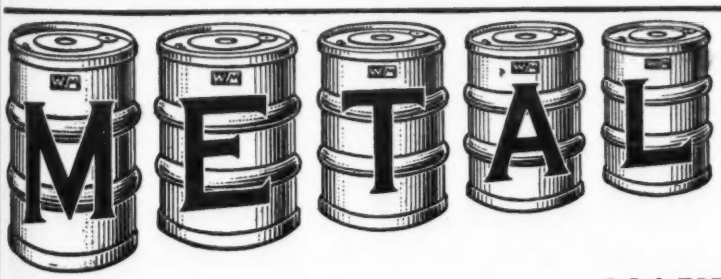

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October 1, 1916.

DRUG MARKET

Unless otherwise specified, our prices are those prevailing in the New York Market, and are for large quantities. Complete prices current will be found on pages 115, 116 and 117, and table of contents on page 11.

Saturday Noon, Sept. 30, 1916.

Pre-eminent among the startling changes in prices which have occurred within the week have been a sharp reduction in the manufacturers' asking figures for quinine salts of all descriptions, as well as in the mild forms of alkaloid and sulphate, known as cinchonine, cinchonidine and quinidine, and a further recovery in the price named for gum opium. Persistent underselling by speculative operators and other second hands has been chiefly responsible for the lowering of prices for quinine by the domestic manufacturers, to a level which had not been quoted by these interests since last December, although a further diminution of buying operations and a desire on the part of the makers to stimulate purchasing also played important parts in influencing the manufacturers to make this move. The additional steps taken by opium importers to restore the price of the gum to the figures demanded two months ago has been inspired by the belief that the present difficulties of importation and replenishment of spot stocks warrant the naming of existing prices, rather than any improvement in the demand.

Besides this recovery in the opium market and marking down of manufacturers' prices for quinine, there have been several other noteworthy developments in the way of price revisions, included in which have been further reductions in the prices asked for the leading salicylates—sodium salicylate, salicylic acid and methyl salicylate, or artificial wintergreen oil—by the domestic manufacturers, and an additional soaring of chemically pure and dynamite glycerin, which has also been participated in to some extent by the crude grades—soap-lye and saponification glycerin—as well as advances in distillers' prices for wood and denatured alcohol, and concessions and outright reductions in acetone, Norwegian codliver oil, domestic dandelion root, celery seed, Chinese cantharides, second-hand prices for bismuth subnitrate, beta naphthol, kola nuts, lycopodium, one manufacturer's quotation for pound bottles of carbolic acid, Surinam tonka beans, American saffron flowers, Spanish sage leaves, high-dried rhubarb, white squills, French fennel seed and California brown and yellow English mustard seed, in addition to a marking up of prices for acetphenetidin, Russian ergot, guarana, Haarlem oil, foreign lac sulphur, nitrate of silver, resorcin crystals, strontium nitrate, sodium cyanide, in second hands; wild cherry and white pine barks, sloe berries, Mexican vanilla beans, one brand of bergamot oil, and a well-known brand of peppermint oil, put up in bottles; Roman chamomile flowers, coltsfoot herb, damiana leaves, French marjoram, berberis aquifolium, mandrake and Northwestern senega roots and Spanish and Italian anise, caraway, natural and bleached coriander, dill, and Dutch, India and Russian poppy seeds.

One of the most interesting developments in the botanical drug market, which is now taking place, is the gradual stiffening and upward movement of prices asked for the ingredients of expectorant preparations, all of which are of American production, including white pine and wild cherry barks, blood or sanguinaria, and spikenard roots and balm of Gilead buds. In anticipation of an exceptionally heavy demand for expectorants made of domestic botanicals, especially on export account, within the next few weeks, or as soon as adequate shipping facilities are again afforded, the growers and gatherers of these articles have been stiffening their views of late and are now expected to mark their prices up still further, together with those named for such other well-known American botanicals, as golden seal, mandrake and senega roots and cascara sagrada bark, in which serious curtilment of this year's yields has either already been noted or is looked for in most quarters.

The principal changes which have been made in prices within the week follow:—

ADVANCED.

Opium, gum, 25c.
Acetphenetidin, $1.
Alcohol, wood and denatured, 10c.
Ergot, Russian, 2c.
Glycerin, C. P., 2¼c.; dynamite, 2c.; soap-lye and saponification, ½c.
Guarana, 5c.
Haarlem oil, 10c.
Lac sulphur, foreign, 10c.
Strontium nitrate, 1c.
Nitrate of silver, ¾c.
Resorcin crystals, $4.
Soda cyanide, in second hands, 5@10c.
Wild cherry bark, 1½c.
White pine bark, ½c.
Sloe berries, 5c.
Vanilla beans, Mexican, whole, 50c.@$1.
Bergamot oil, one brand, 25c.
Peppermint oil, one brand, in bottles, 5c.
Chamomile flowers, Roman, 15c.
Coltsfoot herb, 4c.
Damiana leaves, 1c.
Marjoram, French, ¼c.
Berberis aquifolium root, 2c.
Mandrake root, ½c.
Senega root, Northwestern, 2@5c.
Anise seed, Spanish and Italian, ¾c.
Caraway seed, 2½c.
Colchicum seed, 10c.
Coriander seed, natural, ¾c.; bleached, ¼c.
Dill seed, ¼c.
Poppy seed, Dutch, 1½c.; India, 2½c.; Russian, 2½c.

DECLINED.

Quinine salts, 15c.
Cinchonine, alkaloid, 5c.; suplhate, 7c.
Cinchonidine, alkaloid, 53c.; sulphate, 40c.
Beta naphthol, 5c.
Bismuth subnitrate, in second hands, 40c.
Cantharides, Chinese, whole and powdered, 5c.
Kola nuts, 1c.
Lycopodium, 5c.
Soda salicylate, 5c.
Salicylic acid, 5c.
Carbolic acid, pound bottles, 2c.
Tonka beans, Surinam, 5c.
Wintergreen oil, synthetic, 5c.
Saffron flowers, American, 25c.
Sage leaves, Spanish, 2½c.
Squills, white, 1c.
Rhubarb root, high dried, 1c.
Fennel seed, French, ½c.
Mustard seed, California, brown, 2c.; English, yellow, ¾c.
Acetone, 7½c.
Codliver oil, Norwegian, some brands, $3.
Dandelion root, domestic, 2c.
Celery seed, 1c.

Less important price changes are to be noted in the tables of wholesale prices current, beginning with opium, or in the following paragraphs:—

OPIUM.

In view of the general realization on the part of the New York operators in this basic narcotic that the present difficulties attending upon further importations of this article and the relatively high prices demanded in Macedonia for Turkish gum amply warrant the naming of an $11 level here, local handlers have restored their prices for the gum to that basis by raising their asking figures 25c. further to $11 per pound for Turkish druggists' quality gum in cases. These interests, however, continue to offer the powdered and granular grades at $11.70 and $11.85, respectively, as they believe that these figures establish about the right parity between the gum and the powdered and granular descriptions, in view of the slight lowering of the standards for the latter varieties set forth in the ninth revision of the United States Pharmacopœia. There has been little or no improvement in the demand as a sequel to this latest move toward restoring prices for opium to an $11 basis.

MORPHINE.

Despite the optimistic reports from English makers of this opium derivative to the effect that they are being kept very busy filling contracts and orders for this article and are finding it impossible to book further orders for delivery before December, the American manufacturers are experiencing great difficulty in booking any new orders or contracts of consequence, as they are being generally underbid by their British competitors, so far as the European demand is concerned, the latter being able to produce the goods from the comparatively cheap East Indian opium at far less cost. Notwithstanding this lack of new business of size, domestic makers continue to hold their output very strongly on a bulk basis of $5.50 per ounce for the muriate and sulphate forms, in 25-ounce lots, in one edlivery.

CODEINE.

Domestic manufacturers of this opium derivative are still maintaining their output on a bulk basis of $8.50 per ounce for the alkaloid description, in 10-ounce lots, in one delivery, although purchasing operations have dwindled to meager proportions.

QUININE.

Persistent underselling by speculative interests and other second hands and a further diminution of buying operations, on export as well as on domestic accounts, have at length induced the American salts makers to lower their prices still further, this time to the extent of 15c., making their revised quotations on a bulk basis of 50c. per ounce in 100-ounce tins, which was named last November and December and, in fact, up to December 24 last, when the makers' quotation was suddenly raised to 75c., to continue at that level until six weeks ago. In the downward revision of domestic makers' salts prices a majority of these interests have also lowered their asking figures commensurately for cinchonine, cinchonidine and quinidine. Second hands who had sold several small lots early in the week at 60c. and even at 58c., while the domestic manufacturers were holding out for 65c., have also lowered their asking figures to a 50c. basis of late, although in numerous instances they paid up to $1 an ounce for their present stocks. Landings in London for August are reported to have amounted to 21,776 ounces, while deliveries in that center are said to have aggregated 5,312 ounces, leaving stocks on hand as of September 1 of only 1,330,976 ounces, as compared with 2,154,464 ounces at the corresponding date of last year.

The revised schedule of domestic manufacturers' prices follows:—Sulphate, 100-ounce lots and over—100-ounce cans, 50c.; 50-ounce cans, 50½c.; 25-ounce cans, 51c.; 5-ounce cans, 52c.; one-ounce cans, 55c.; one-ounce vials, 57c.; half-ounce vials, 62c.; quarter-ounce vials, 67c.; eighth-ounce vials,

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77c.; one-twelfth-ounce vials, 92c.; one-sixteenth-ounce vials, $1.07. Bisulphate, 100-ounce lots—100-ounce cans, 50c.; 5-ounce cans, 52c.; one-ounce cans, 54c.; one-ounce vials, 54c. Alkaloid and minor salts, 100-ounce lots—100-ounce cans, alkaloid, 82c.; acetate, 90c.; arsenate, 80c.; arsenited, 80c.; benzoate, 80c.; citrate, 74c.; dihydro-bromide, $1.18; dihydro-chloride, 78c.; ferrocyanide, 78c.; formate, 96c.; glycerophosphate, $1.28; hydriodide, 92c.; hydrobromide, 70c.; hydrochloride, 70c.; hydrochloride and urea, 96c.; hydrochlorosulph., 90c.; hypophosphite, 80c.; lactate, 80c.; phenolsulphonate, 56c.; phosphate, 72c.; salicylate, 68c.; tannate, 44c.; tartrate, 68c.; valerate, powder, 76c.

Cinchonine alkaloid has been marked down to 20c. and cinchonine sulphate to 12c., while cinchonidine alkaloid has been lowered to 59c. by some makers, but is being held at 85c. by others, and cinchonidine sulphate has been reduced to 35c. by some manufacturers but is being held at 50c. by others. Quinidine alkaloid crystals and sulphate have been lowered to 87c. and 50c., respectively, in 100-ounce lots.

Offerings at the cinchona bark auction, which was held in Amsterdam September 28, consisted of 993 bales and 820 cases, weighing 96,595 kilos of Java goods, and including 84,914 kilos of Succirubra, 485 kilos of Hybrides, 9,771 kilos of Robusta and 1,425 kilos of Ledgeriana.

Details of the London bark auction, held September 2, have been supplied by our London correspondent as follows:—

London Cinchona Bark Auction.

London, Sept. 12, 1916.

At the periodical auction held here today, the average unit worked out at 2¾d. per pound. In all 1,067 packages were catalogued and about 800 sold as follows:—

	d.	s. d.
East India, pkgs., 557 offered, 300 sold—		
Officinalis, bold, silvery quill...lb.	8¼@ 1	0
broken quill	10½	
natural stem chips and spoke shavings	6½@ 0	10½
root	10 @ 0	11¾
African, bis, 510 offered, 510 sold—		
fair silvery quill	6¾@ 0	7
broken quill	5½@ 0	6

SUNDRY DRUGS AND MISCELLANEOUS ITEMS.

ACETPHENETIDIN.—As spot stocks have been still further reduced of late and domestic coal-tar product makers are not yet able to produce this antipyretic remedy on a commercial scale, local holders have recently raised their prices $1 further to $37@38 and have made a few sales at the inside figure. Latest advices from London state that sales have been made in that center lately at 100s. per pound.

ACETONE.—A noteworthy reduction in the prices asked for acetate of lime by the leading manufacturers, which is to become effective October 2, in consequence of a greatly augmented output, has also been reflected in the quotation which is to be made for acetone, beginning on that date. Thus, acetate of lime will hereafter be offered at $3.50@3.55, while acetone will be quoted at 22½@23c.

AGAR AGAR.—Although the primary markets for this Japanese product continue strong, in common with those for all other commodities in the Mikado's empire, some local importers have recently offered their stocks at slightly lower figures and are now quoting the No. 1 grade at 55c. and even at 54c., while quoting the No. 2 description at 52@54c. and the No. 3 grade at 45@47c.

ALCOHOL.—Wood, or methyl, and denatured alcohol have been marked up 5c. further by leading domestic distillers, in view of a growing export demand, making the revised quotations 70@73c. for the 95 per cent. refined wood, 75@78c. for the 97 per cent. grade of these spirits and $1.10 for the purified methyl grade and 54@56c. for the 180 proof description of denatured alcohol and 55@57c. for the 188 proof grade of the latter goods. Ethyl grades continue to be quoted by the American distillers at previous mentioned figures.

BALM OF GILEAD BUDS.—Some sales have recently been made at 22c. and a stronger undertone is developing steadily, as an abnormally active export as well as domestic consumption is looked for within the near future, while the crop outlook is said to be far from satisfactory.

BETA NAPHTHOL.—Although a majority of manufacturers of this commodity continue to ask $1.15 for the technical grade, this description of the article is available in some quarters at $1.10, in a limited way, while the resublimed goods, though still officially maintained by most makers at a minimum of $1.25, are being quoted by some interests at $1.20.

BISMUTH.—Despite a further weakening of bismuth metal, manufacturers of the bismuth preparations have continued to hold their prices firmly at previously mentioned figures. Second hands, however, have cut prices for the subnitrate to the extent of 40c. and in some instances are offering their goods at $2.70@2.75 and have actually made a few sales at the inside figure. Domestic makers are still quoting this article on a bulk basis of $3.10@3.15. Importations of the metal at the local market have been augmented of late.

CANTHARIDES.—More liberal of the Chinese goods have been of late and local holders, in some stances, have lowered their prices further to 95c. for the whole and $1.15 for the powdered flies, th $1@1.05 continues to be asked for whole goods and $1.20@1.25 for the dered description in some quar Russian beetles are now being qu at $4.25@4.50 for the whole goods at $5@5.25 for the powdered grade.

CODLIVER OIL.—Norwegian o been marked down to some exten local holders and a few brands are being quoted at $135@140, as the mand has been satisfied to a cons able degree with the cheaper N foundland product.

ERGOT.—Russian goods are bei trifle more firmly maintained in quarters, as the customary win closing of the port of Archangel proaches, and local handlers are generally demanding a minimum 70c. while still asking up to 72c this article. Spanish ergot contin to be quoted at 75@80c.

GLYCERIN.—A steadily growing mand for dynamite and chemic pure goods has served to continue upward course of prices for these fined as well as for the crude gra of this commodity. While some s of the chemically pure article in dr have been made within the week 43c., the Western refiner who did ness at this figure is now asking and one prominent Eastern refine demanding 44c. One refiner in the tral West, however, continues to q C. P. at 42½c. in drums, but it is considered doubtful whether this terest would book orders for any siderable quantity at that figure. the other hand, one Chicago pack concern and a large Chicago opera in glycerin are now holding out 45c. for the C. P. goods. Dynamite recently been marked up to 45c. by the leading refiners, as inquiries large lots, including one for 50 have stiffened still further the v of the leading sellers, already stren ened by the steadily advancing ma for the crude goods. Some sales been made of dynamite at 45c., bu majority of users are loath to pay figure. Soaplye and saponifie grades have been raised a half ce 31½@32½c. and to 34½@35½c., re tively, while candle crude is als ing quoted at 34½@35½c. and the degrees yellow distilled grade a @47c.

Our correspondent in Paris has vised us by mail as follows:—

Paris, Sept. 14, 19

There has been no change in this mark saponification glycerin, but some lots of and nearby delivery goods have been m 167.50 francs per 100 kilos, naked, net There are still some lots offered at 170 francs which have found no takers.

Soaplye glycerin has been offered a francs per 100 kilos, naked, for de throughout the remainder of this year, wh attracting the attention of buyers, who tinue conservative on the score of purch this description of the article.

CHICAGO GLYCERINE MARK

Chicago, Sept. 20, 19

The glycerine market here is firmer this w Sales of 80 per cent. crude have been m at 32c., drums included, carload lots, f. point of shipment, while 88 per cent. has sold at 35c., drums included, carlo o. b. point of shipment. Demand has proved.

One Western refiner who found himself of the dynamite he needed, "covered" by ing 44c. for three cars of dynamite glyc drums included, f. o. b. Chicago, but re less of these higher prices, actual consu have not seen fit to enter the market. N theless to say, the undertone is stronger marily owing to a better demand for cr cally pure glycerine, for which sellers are asking prices ranging from 42½ to 45c., f. o. b. Chicago.

GUARANA.—As spot stocks h been diminished still further of local handlers have raised their pr for this article 5c. more to $1.15@

HAARLEM OIL.—With a recent a menting of the demand for this artic prices have been marked up by leading importers and other hand to $2.60@2.75.

KOLA NUTS.—A seasonable wa of the demand and a consequent m erate accumulation of these goods h brought about a reduction of a cen the prices named for them, making revised quotations 11@12c. for W Indian goods.

LAC SULPHUR.—Foreign goods in very scanty supply and are now ing strongly held at 42@45c., or above the figures previously na Domestic goods continue to be quo at 8@9c.

LYCOPODIUM.—Increasing com tition among local dealers have weighed as a factor marketwise approaching closing of the port Archangel, and some of the local ha lers of this article have lowered th prices 5c. further, to $1.65 for the S. P. description, although $1.70 is more generally asked for this grad

MENTHOL.—A strong undertone continued to be noted in the local well as in the primary markets for t article, and, at the close of the w a majority of local importers and ot handlers are asking a minimum of for spot goods in cases, although a small lots continue available at and even at $3.25. Broken lots being quoted at $3.36@3.50. Latest fers from Japan have been on a ba of $3.25 in bond, for October-Novem

pment. Confirmation of recent reports from Japan, telling of considerable damage to the peppermint crops, pecially in the province or district own as Hokkaido or Yezo, have been ceived by local importers within the ek. Some of the latest advices thus ceived have told of a probable curtailment of this year's yield amounting 20 per cent., due to excessive rains d otherwise unfavorable weather.

NAPHTHALINE. — Domestic goods ntinue to be quoted at 8c. for both lls and flakes, but foreign goods are ill commanding 9½c. for both descriptions.

NUX VOMICA.—Latest arrivals at e local port have included 2,206 ckets from Calcutta. A moderate mand continues to be noted, and cal handlers are still asking 7@7½c. r the whole and 10½@11c. for the wdered description.

POTASH.—While a majority of local lders of permanganate continue to ld out for a minimum of $1.85@1.95, hile quoting up to $2 in some inances, in consequence of a growing ortage of this article here, a few ffers are still being made at $1.75, and, one quarter, it is said to be possible buy in a small way at $1.70.

QUICKSILVER.—Only scanty supplies of this liquid metal are now available here, as stocks have been greatly reduced of late, and at least one selling agent in this market has nothing to offer. Those who are in a position to quote are holding firmly at $75@76 for spot goods in flasks. Latest cable advices from London have told of a reduction in the prices named for this commodity by second hands to that center to £17 12s. 6d. a level, or 2s. 6d. below the figure recently asked, but have quoted Rothschild's price as unchanged at £17 15c.

RESORCIN.—So great is the shortage in this commodity that local holders have raised their prices $4 further, to $28@29 for the crystals.

SODA.—Spot stocks of sodium cyanide have been reduced still further of late, as buying operations have become still more active, and second hands are obtaining large premiums over manufacturers' figures for their spot goods. Some sales have recently been made by these second hands at 55c., although it is still possible to buy in some quarters at 45c. Salicylate has been marked down 5c. further by the manufacturers of late, making their revised quotation $1.70. A few offers continue to be made by second hands at $1.60.

STRONTIUM.—Nitrate is stronger, in consequence of a further lowering of spot stocks, and local holders are now demanding 32@35c. for their goods.

ACIDS.

BENZOIC.—Spot stocks have been reduced to proportions close to the vanishing point, and while a nominal quotation of $11.50@12 continues to be made for the true acid made from gum benzoin, of which the local market is still bare, this same quotation is also named for the meager quantities of goods made from tuluol.

CARBOLIC.—A further steady augmenting of the domestic production has weakened the views of some operators of late and, while most offers continue to be made on a basis of 57½c. for the U. S. P. phenol crystals in drums, some business has been done at 55c. recently and might be duplicated, although in some quarters 60c. is more frequently asked for these goods in such quantities. One manufacturer has lowered the price for U. S. P. phenol crystals in pound bottles to 63c., but all the others continue to ask 55c. for such goods. Five-pound bottles are still quoted at 63@64c.; 100-pound cans or tins are being quoted at 58@65c., and the goods in liquid form are being offered at 53@60c.

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Cuttle Bone French	Curacoa Aloes
Gum Olibanum	Dandelion Root
Gum Elemi	Cape Aloes
Gum Assafoetida	Gum Galbanum
Lycopodium	Squills Root
Long Buchu	Short Buchu
Gum Mastic	Cannabis Indica
English Bi Carb Soda	
Roman Chamomiles	
Sabadilla Seed	
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Cuttle Bone Jewelers, Large	
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greatly reduced and premiums are frequently being obtained by second hands for immediately available goods. Manufacturers continue to quote their output at $2.90@3.10 for the crystals and at $3@3.20 for the resublimed grade.

SALICYLIC.—Manufacturers have lowered their prices 5c. further to a basis of $1.65, and, although some offers have been made by second hands at somewhat lower figures, the quality of the goods thus offered has been seriously questioned.

BALSAMS.

PERU.—A moderate demand continues to be reported for this balsam and local importers continue to quote their stocks at $3.50@3.75, as to dealer and quantity.

BARKS.

WILD CHERRY.—First hands in the country have stiffened their views of late as the demand has increased and there is every prospect for a more urgent request for these goods from expectorant manufacturers within the near future and, as a result of this raising of the "country" price, local handlers have generally advanced their asking figures to 6@8c., as to quality.

WHITE PINE.—An increasing demand for this domestic article, due to augmented buying of expectorant and cough medicine makers, has inspired a raising of prices by the country handlers as well as by local dealers. Several sales have recently been made at 4½c., and 4½@5c. is now the general quotation here.

BERRIES.

BAYBERRY.—A further sharp advance has been recorded in this article. Bark of root is now being held at 35c., and bark of the stem at 25c.

JUNIPER.—Latest advices from Leghorn tell of sharply advancing markets abroad, but, although a firmer undertone has thus been created here, local importers and other handlers have not yet marked their prices up commensurately, but are continuing to offer spot goods at 4¼@4½c. for poor to ordinary quality goods. High quality berries, however, are commanding 4¾@5c.

SLOE.—A growing scarcity of these berries has induced local handlers to raise their prices 5c. further, making their revised quotation 70@75c.

BEANS.

TONKA.—Surinam crystallized beans have been offered down still further of late, as the demand has flagged and supplies have been permitted to accumulate moderately here. This latest downward revision of prices has carried the figures asked for these goods down to 60@65c.

VANILLA.—Latest advices from the producing regions of Mexico report that the flowering of the vines is progressing satisfactorily in the upland districts, but that the maturing of the vines in the valleys and plains, especially those near the seacoast, is far from satisfactory. No sizable lots of the 1915-1916 crop of Mexican beans now remain uncontracted for in the Papantla or Gutierrez-Zamora districts, and estimates on the 1916-1917 yield of these beans still suggest a very meager total, not exceeding 110,000 pounds of whole beans or 30,000 pounds of cuts. In some quarters, it is figured that the combined new crop of whole beans and cuts in Mexico will not be more than 120,000 pounds, as compared with an average yield of 360,000 to 400,000 pounds. A serious shortage therefore appears inevitable, and, in view of this outlook, New York importers are becoming still firmer in their views and, although occasionally offering a few lots of very ordinary quality Mexican whole beans at $4.50@4.60, are now generally demanding a minimum of $5 for good quality beans, while quoting up to $7 for some superior goods, according to brand, and holding cuts strongly at $3.75@4.25.

Bourbons continue to be offered far below the parity of Mexican cuts here, as supplies of these beans continue fairly liberal and the Paris operators have not yet succeeded in raising their prices, as they had planned, because offers from the various islands of production have continued to be made freely, while the consuming demand in Europe is greatly contracted. Local operators are still quoting their Bourbon beans at $2.60@3.50, according to quality.

Details of the London auction held September 12, have been furnished by our London correspondent as follows:—

London Vanilla Auction.

London, Sept. 12, 1916.

At an auction held here today 1,000 tons were put up, meeting with a good demand. Quality was not always all to be desired, but almost all the goods sold at previous sales' rates. The details are:—

	s.	d.	s.	d.
Seychelles, tins, 360 offered, 337 sold—				
fair to good firsts, 5½@8 inch....lb.	8	0@9	6	
leanish but good flavor, 3½@7½ inch	7	0@8	9	
fair flavored, 2½@6½ inch.....	5	9@7	9	
fair 3½@4½ inch.....	5	0		
good seconds, 3@7 inch.....	7	0@8	0	
brown foxy and split, sweet.....	6	0@8	9	
Madagascar, tins, 463 offered, 402 sold—				
fair firsts part leanish and cuts, 5½@8½ inch.....	7	0@10	6	
3½@7 inch	5	6@6	6	
seconds, cuts, 4½@5½ inch.....	6	3		
brown foxy and split, sweet.....	5	3@6	6	
moldy various lengths.....	1	0@5	0	
Mauritius, tins, 77 offered, 75 sold—				
firsts, part off flavor, 6@9 inch....	7	0@8	6	
lean fair flavor, 4@8 inch.....	8	0@9	0	
good seconds, 2½@4 inch.....	6	0		
brown split, sweet.....	6	6@7	6	
East India, tins, 48 offered, 11 sold—				
Tellicherry, Ceylon character foxy sweet, 3½@8 inch.....	7	6@8	0	
Ceylon, tins, 9 offered, 9 sold—				
fair first good flavor, 6@8 inch.....	8	0		
part brown sweet split, 3@7½ inch..	6	6@7	6	
West India, tins, 16 offered, 16 sold—				
part wild	6	0@7	3	

South Americans are still in very scanty supply and strongly maintained by local handlers at $3.25@3.50 for ordinary to good Guadaloupe goods. Some lots of superfine Guadaloupe beans, of previous years' crops, continue to command even higher figures represented by a range from $3.60@4.

Tahitis are in only light supply in San Francisco, and in the local market and New York operators generally continue to hold their stocks at a minimum of $1.60 for the green label goods.

ESSENTIAL OILS.

BERGAMOT.—In recognition of the recent further advance in the Sicilian markets, the price asked for one brand of this Messina essence has been marked up 25c. more of late, to $5.75. Another well-known brand, however, is still being offered at $5.50, although this figure is at least $1 below the present import cost. Most other brands continue to be offered at $5.50.

PEPPERMINT.—One well-known brand, put up in bottles, has been marked up 5c. further, to $2.85@2.90, but bulk goods are still being quoted at $2.30@2.40, with a majority of local handlers asking the outside figure. Reports of a serious curtailment of the 1916 yield continue to be circulated industriously from Michigan and Indiana, but still lack confirmation. The strong financial backing and support possessed by the distillers and other primary market operators are proving sufficient to enable these interests to keep prices at high levels.

WINTERGREEN.—Synthetic oil, known chemically as methyl salicylate, has been marked down by the manufacturers 5c. further within the week, to $1.65. Sweet birch oil, however, is strongly held at $2.50@2.75, and genuine leaf oil, or gaultheria, at $3.85@4.

FLOWERS.

CHAMOMILE.—Roman flowers, as well as Hungarian, are becoming very scarce and are now being more firmly maintained at 50@52c., or 15c. above the levels previously reached. Hungarian goods continue to command 55@60c. whenever obtainable. Some sales of Roman flowers have recently been made at 50c.

SAFFRON.—American saffron flowers, or safflower, have been offered down heavily of late, as the demand has waned and a moderate accumulation has resulted. Revised figures are $1.40@1.45. Valencia or Spanish flowers, which were marked up to an $11 basis a week ago, weakened slightly early in the week, being offered in a few quarters of the local market temporarily at $10.90, but have recently recovered from this dip and are once more being strongly maintained at $11 @11.25.

MEDICINAL AND OTHER GUMS.

ARABIC.—A recent heavy reduction of spot goods has induced some local holders to raise their prices to a minimum of 17c. for cleaned amber sorts. A few lots are still available, however, at 15@16c.

CAMPHOR.—Unprecedented strength still pervades the American as well as the primary markets for refined camphor, in consequence of the constantly increasing demand from technical as well as pharmaceutical users of these goods and a growing scarcity of most of the sizes of Japanese refined gum, together with the latest raising of prices for the crude goods by the Japanese monopoly, effective at the outset of this month. Additional purchases of new crop refined gum have been made of two-and-one-half-pound slabs of Japanese refined gum for March-April shipment at 90c. and even at 92c., duty paid, although early in the week some offers were extended from Japan at 85c. for this shipment and at 87c. for May-June shipment. Local importers are still trying to accommodate their regular customers with meager lots on a basis of 72c. for two-and-one-half-pound slabs and at 73c. for one-pound blocks and 75c. for ounce tablets, 24s and 32s, but until pressed to do so these interests are not offering any of their goods to consumers. Domestic refiners continue to quote their output on a bulk basis of 69½c. in barrels, but are not booking any contracts or orders for future deliveries at that level and are merely accommodating regular customers on this basis, while asking 75c. and more from all technical users of the gum.

HERBS AND LEAVES.

BELLADONNA.—Some offers of home-grown goods continue to be made at $1.50, but a majority of the cultivators of this article in the United States are now demanding $1.75 for their leaves, and the foreign goods are likewise generally commanding that figure, whenever obtainable. Arrivals of thirty bales of the foreign goods have recently been noted.

COLTSFOOT.—A further reduction of spot stock and the dark outlook for

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replenishment on an adequate scale have combined to stiffen the views of local handlers, who have raised their prices of late to 20@22c.

DAMIANA.—A growing scarcity of this Mexican product has brought about an uplift of a cent in the prices asked by local handlers, who are now quoting at 12@13c.

DIGITALIS.—Offers of domestic leaves continue to be made at 40c, and some Spanish goods are still being quoted at 30@35c., but genuine Austrian leaves of good quality are commanding 55@60c., although inferior foreign goods are available at 45@50c.

MARJORAM.—French goods are in scanty supply and are now being strongly maintained at 19¼@20c. German goods are ever scarcer, and continue to be held at 45@52c., although rumors of offers at 43c. are heard in some quarters.

SAGE.—Spanish leaves are weaker, as more liberal offers have been made of late, and local importers and other handlers are now quoting these goods at 8@9c. Arrivals at the local port within the week have included 250 bales of foreign leaves.

SAVORY.—These leaves continue to be held at 17¼@17¾c. for good-quality goods, although reported in some quarters as obtainable at 17c.

SENNA.—An arrival of 206 bales of Tinnevelly leaves has been noted at the local port within the week, but these leaves have gone into consumption and have, therefore, failed to relieve the shortage of these goods here to any noticeable extent. Some poor-quality leaves are still available at 22@24c., but good-quality goods continue to command 25@30c., and some No. 1 leaves are still being strongly maintained at 32@34c.

SAVIN.—A growing scarcity of these leaves has brought about a further marking up of prices asked for them by local holders, to 25c.

SHELLAC.

In sympathy with the recent sharp recession in the London market, due chiefly to the sudden quietus put upon all speculation in this article by the British Government, the New York shellac market has weakened materially within the week, without, however, checking purchasing operations on the part of consumers. In the initial marking down of prices by local importers and other operators, there was manifested a tendency to overstep the mark warranted by the reaction in London, and, in some instances, T. N. was reduced from 33c. to 30½c. With the close of the week, however, it was realized that this lowering of prices here had been overdone, and those who had previously marked their figures down to 30½c., became unwilling to sell at less than 31c., while a majority of local handlers held out for a minimum of 32c. for this description of orange goods. Similarly, although some local importers marked their prices for the bleached grades down to 37c. for "bone dry" early in the week, there were few offers of this grade at less than 38c. at the close, while a majority of holders were seeking 39c. and even 40c. Commercial bleached goods, which, in some instances, had been lowered to 31c., were generally quoted at a minimum of 31½c. at the end of the week, while up to 32c. continued to be named in numerous quarters. Other grades of this commodity were unaffected by the weakness in London, and, in the absence of more than meager offerings of the private marks, prices for these goods were well maintained at previously mentioned figures.

Offers from Calcutta throughout the week were of a tentative character, intended more to sound the attitude of the importers in the United States than anyhing else, and, although these quasi-offers quoted T. N. at an equivalent of 30¼c. and later 28¼c, it was realized that no business could be done at these figures, which showed a material lowering of the price in the primary market for the week.

Arrivals at the local port, recorded during the week, amounted to 995 bags of shellac and 250 bags of sticklac, on the steamship Tasmanic, from Calcutta; 2,500 bags and 225 chests of shellac on the steamship Merton Hall, from that primary port, and 2,945 bags of shellac and 95 bags of seedlac on the steamship Suveric, also from Calcutta.

Our correspondent in London has advised us at the close of the week that fair, free quality of T. N. has been marked down 10s. and is now being offered at 122s., while the December delivery is being quoted at 120s. 6d., or 10s. 6d. below the figure named a week ago.

ROOTS.

BERBERIS AQUIFOLIUM.—As spot stocks of this root have been reduced still further of late, local holders have raised their prices to a minimum of 10c., and are now asking up to 11c. in some instances.

DANDELION.—Domestic dandelion root is being offered somewhat more freely, and is now available at 27@29c., although the German goods continue to be quoted at 32@36c.

BLOOD.—Country interests are now asking 8c. for this root, and local handlers are firm in their views, demanding 9@9½c., and contemplating a further uplift within the near future.

MANDRAKE.—Offers of this root at 6½c. have been withdrawn of late by holders in this market, as the co... price is now well maintained a... minimum of 6c. The quotation for ... goods is now 7@7½c. in most quar... of the local market, but up to h... asked by some holders here.

RHUBARB.—High dried root ... been marked down a cent of late, a... sequel to an arrival of 63 cases ... more liberal offers, making the re... quotation 17@18c.

SENEGA.—Northwestern root ... been marked up by most local hand... to a minimum of 65c., but a few s... lots are still quoted at 63@64c. ... export demand for this domestic ... tanical product is growing daily ... latest reports from the producing ... gions indicate a serious short... Early in the week several sales w... made at 62c.

SQUILLS.—Only a moderate dem... is noted for this root, and local h... ers have generally lowered their pr... to 13@14c., although some hand... here are still asking 15c.

SPIKENARD.—The country price ... this American botanical has b... marked up of late to 9@10c., and l... handlers are very firm in their vie... quoting spot goods at a minimum ... 10c., while asking up to 12c. in s... instances.

SEEDS.

ANISE.—Spanish and Italian ... have been advanced to the extent ... three-quarters of a cent, on a gro... shortage here, making the revised ... tation 17@18¼c. for both descripti... Star seed continues to be quoted at ... 24c. and Levant at 12½@13c.

CARAWAY.—In view of the pre... character of spot offerings and the ... creasing difficulties encountered in ... tempting to replenish the local st... with goods from Rotterdam, New Y... importers and other leading hand... have raised their prices to 26¾@2...

COLCHICUM.—With a recent fur... reduction of spot stocks, local hand... have stiffened their views and are ... asking $1.25@1.30 for this seed, but ... already made some sales at $1.25.

CELERY.—Local importers and ... handlers of this seed continue to ... their spot stocks at 22@24c. An ac... demand is still noted for these ... Offers of new crop seed, for Octo... November shipment, have been m... from Marseilles of late at 18@19c.

CORIANDER.—Latest advices f... London, telling of a further shar... vance in prices in that center, ... bullish crop news from Morocco, h... been reflected here in a marking ... of prices to 9¼@10c. for the pa... seed and to 10¼@11c. for the bl... goods.

DILL.—A growing scarcity of ... seed, resulting from the recent h... takings by the picking trade, has ... duced local holders to raise their p... to 15½@16c.

FENNEL.—French seed is in slig... freer supply and is now being off... here at 11¾@12c.

FOENUGREEK.—A noteworthy s... city of this seed has inspired ... general marking up of prices by h... handlers to a minimum of 7c. Rep... from London state that the cro... Morocco has proven a failure and ... holders there are asking 22s. 6d.

MUSTARD.—California brown ... English yellow seeds have been off... down of late under more liberal ... plies, to 11½@12c. and to 12¼@1... respectively.

POPPY.—With a further reducti... spot stocks, through the absorption ... supplies by the pickling trade, l... importers and other handlers h... raised their prices still further for ... descriptions making their revised q... tations 29@30c. for Dutch, 26½@27c. ... India and 27½@28c. for Russian p... respectively.

QUINCE.—Some lots of poor qu... seed are being offered at 70c., but g... quality goods are commanding 75@... with a majority of local handlers a... ing the outside figure.

SPICES.

Heavy buying operations on the ... of the pickling interests have ... noted within the last month and ... tinue to absorb current offerings ... many of the crude spices. A ... strong undertone, therefore, still p... vades the entire local market, ... prices continue to be strongly m... tained by local importers and ... handlers at previously mentioned ... ures.

WAXES.

JAPAN.—The primary market ... this vegetable wax continue to m... fest great strength and local import... and other handlers are still asking ... @15c. for their spot goods. Offers f... Japan have been made of late for ... tober-November deliveries at an eq... alent of 13⅞@14c., and these figu... seemingly would warrant the ma... of still higher prices here.

(For London Closing Prices ... Cable, see page 113.)

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DOW CHEMICAL COMPANY
MIDLAND, MICH.

See our exhibit at the Second National Exposition of Chemical Industries, Grand Central Palace, New York, week of Sept. 25

"NAPROCO" BICHROMATES

TRADE MARK REGISTERED

"NAPROCO" BICHROMATE OF SODA

"NAPROCO" BICHROMATES OF POTASH
Crystals and Precipitate

NATURAL PRODUCTS REFINING CO.
902-910 Garfield Avenue
Jersey City, N. J., U. S. A.
Cable Address—"NAPROCO"
Jersey City
SOLE MANUFACTURERS

IMPORTS AND EXPORTS

For the Week Ending September 29, 1916

Imports Entered for Consumption at NEW YORK

ID, CRESYLIC—25 dms, 22,125 lbs, Brown Bros & Co, California, Glasgow
22 cks, 1,344 gls, White Tar Co, California, Glasgow
28 dms, 33,630 lbs, Brown Bros & Co, Tuscania, Glasgow
LBUMEN, BLOOD—4 cks, 1,784 lbs, C H Reisig, New York, Liverpool
OG—10 cs, 2,000 lbs, Frost & Cundill, Inc, Muncaster Castle, Singapore
74 cs, 14,800 lbs, Innis, Speiden & Co, Muncaster Castle, Singapore
MONIA, MURIATE—30 cks, 21,600 lbs, C de P Field & Co, Wells City, Bristol
NILINE COLORS—24 cks, 7,200 lbs, Geigyter Meer Co, Cretic, Genoa
NIMAL CHARCOAL—600 bgs, 132,000 lbs, Siemon & Elting, California, Glasgow
NTIMONY, REGULUS—1,000 cs, 225,000 lbs, E T Seward, Saint Bede, Singapore
RK—4 bls, Panama Hat Importing Co, Advance, Cristobal
NGROVE—75 bgs, 10,875 lbs, Haley, Hammond Co, Sosua, Pto Colombo
2 bls, 7,540 lbs, J Menendez & Co, Advance, Cristobal
1,000 bgs, 145,000 lbs, Perry, Ryer & Co, Saint Bede, Singapore
QUILLAY—589 bls, W R Grace & Co, Sherman, Kingston
NS, VANILLA—1 cs, 195 lbs, C H Demerest, Muncaster Castle, Singapore
STERING FLIES—12 cs, J L Hopkins & Co, Muncaster Castle, Singapore
STLES—162 cs, 13,566 lbs, Dowler, Forbes & Co, Muncaster Castle, Singapore
25 cs, 3,050 lbs, Hudson Forwarding Co, Volodia, London
2 cks, 920 lbs, Hudson Forwarding Co, Volodia, London
1 bbl, 459 lbs, Hudson Forwarding Co, Volodia, London
13 cs, 1,729 lbs, Wells, Fargo & Co Express, Volodia, London
4 bgs, Wells, Fargo & Co Express, Volodia, London
10 cs, 1,330 lbs, Huesmann & Co, Saint Bede, Singapore
RONZE POWDER—60 cs, 8,100 lbs, Aug Stauff, Muncaster Castle, Singapore
17 cs, 2,295 lbs, Baer Bros, Muncaster Castle, Singapore
MPHOR, REFINED—50 cs, 5,000 lbs, Frost & Cundill, Inc, Muncaster Castle, Singapore
ALK, BLOCK—(Bulk) 900 tons, The J W Higman Co, Volodia, London
EMICAL COMPOUNDS—2 cs, Lehn & Fink, Rochambeau, Bordeaux
LOROFORM—3 cs, Burroughs, Wellcome & Co, Volodia, London
THYL—3 cs, Burroughs, Wellcome & Co, Volodia, London
NNAMON—100 bls, 10,000 lbs, Austin, Nichols & Co, Egyptian Transport, Colombo
AY—(Bulk), 2 lots, Moore & Munger, Wells City, Bristol
HINA—90 cks, 48 tons, L A Salomon & Bro, Cornish Point, Cardiff
(Bulk), 704 tons, 21 cwt, The J W Higman Co, Inc, Cornish Point, Cardiff
(Bulk), 1,073 tons, 32 cwt, Hammill & Gillespie, Cornish Point, Cardiff
225 cks, 175 tons, Hammill & Gillespie, Cornish Point, Cardiff
90 cks, 40 tons, F A Reichard, Cornish Point, Cardiff
(Bulk), 371 tons, 30 cwt, Moore & Munger, Cornish Point, Cardiff
80 cks, 25 tons, C B Chrystal, Cornish Point, Cardiff
40 cks, 20 tons, C B Chrystal, Cornish Point, Cardiff
(Bulk), 1,681 tons, 16 cwt, Perkins, Goodwin & Co, Cornish Point, Cardiff
(Bulk), 1,722 tons, 22 cwt, Perry, Ryer & Co, Cornish Point, Cardiff
90 cks, 25 tons, J Lee Smith & Co, Cornish Point, Cardiff
PE—25 cs, Thompson & Putney, New York, Liverpool
COANUT DES—100 cs, 13,500 lbs, Rutger, Bleecker & Co, Suveric, Colombo
171 cs, 23,088 lbs, P E Anderson & Co, Suveric, Colombo
1,173 cs, 158,355 lbs, Habicht, Braun & Co, Egyptian Transport, Colombo
100 cs, 13,500 lbs, Konig Bros & Co, Volodia, London
LOCYNTH.—18 bls, T M Duche & Sons, Volodia, London
LORS—4 cs, Aug Stauff, Muncaster Castle, Singapore
ROSTING.—1 cs, E A Lasee, Muncaster Castle, Singapore
PRA.—112 bgs, 14,000 lbs, A S Lascelles & Co, Manchioneal, Kingston
15 bgs, 1,875 lbs, Franklin, Baker & Co, Manchioneal, Kingston
8 bgs, 1,000 lbs, Diz & Williams, Advance, Cristobal
41 bgs, 5,125 lbs, Franklin, Baker & Co, Bella, Kingston
RKWOOD.—4,845 bls, 775,200 lbs, Bucknoll, Schultz & Co, St Croix, Lisbon
11,946 bls, 1,825,360 lbs, Lawrence, Johnson & Co, Berit, Lisbon
OSOTE.—1 cs, McKesson & Robbins, Santa Marta, Kingston
EBS.—93 bgs, 11,160 lbs, J B Horner, Muncaster Castle, Singapore
TCH.—200 cs, 19,000 lbs, C H Demerest, Suveric, Colombo
100 cs, 9,500 lbs, B P Ducas & Co, Suveric, Colombo
AGON'S BLOOD.—11 cs, 1,870 lbs, F B Ross & Co, Muncaster Castle, Singapore
5 cs, 850 lbs, F B Ross & Co, Saint Bede, Singapore
9 cs, 1,530 lbs, Otto Gross, Saint Bede, Singapore
UGS, CRUDE.—2 cs, J W Hampton Jr & Co, Suveric, Calcutta
2 cs, Hensel, Bruckmann & Lorbacher, Strathspey, Havre
EWOOD EXTRACT—16 cks, 5,360 lbs, B P Ducas & Co, Rochambeau, Bordeaux
2 cs, H Kohnstamm & Co, Rochambeau, Bordeaux
RTH, FULLER'S.—300 bgs, 3 tons, L A Salomon & Bro, Wells City, Bristol
IENNA.—74 bbls, 26,040 lbs, W A Foster & Co, Taormina, Genoa
G YOLK.—255 cs, 56,100 lbs, German-American Specialty Co, Muncaster Castle, Singapore
157 cs, 34,540 lbs, Sturgess Egg Product Co, Saint Bede, Singapore
AMEL, SOFT.—2 cs, Keystone Watch Case Co, Saxonia, Liverpool
RRO, MANGANESE —1,818 bgs, 245,430 lbs, A H Ringk & Co Suveric, Calcutta
2,944 bgs, 343,440 lbs, A H Ringk & Co, Egyptian Transport, Calcutta
H SOUNDS.—2 bls, 470 lbs, G Amsnick & Co, Zulia, Maracaibo
25 bls, 5,405 lbs, Meyer & Co, Zulia, Maracaibo
AXSEED.—24,880 bgs, 54,755 bus, Spencer Kellogg & Sons, D B Barrett, Buenos Aires
74,863 bgs, 146,648 bus, Spencer Kellogg & Sons, Munwood, Buenos Aires
Bulk, 5,411 tons, Spencer Kellogg & Sons, Bjouetjord, Buenos Aires
FLOWERS, MEDICINAL.—25 bls, P H Petry & Co, Muncaster Castle, Singapore
GAMBIER—2,116 cs, 423,200 lbs, L Littlejohn & Co, Muncaster Castle, Singapore
266 bgs, 38,570 lbs, L Littlejohn & Co, Muncaster Castle, Singapore
163 bgs, 23,635 lbs, L Littlejohn & Co, Saint Bede, Singapore
GINGER—8 bbls, 1,040 lbs, New York & West Indies Trading Co, Manchioneal, Kingston
GLASS, WINDOW—11 cs, Semon, Bache & Co, Celtic, Liverpool
37 cs, Leo Popper & Sons, Celtic, Liverpool
GLUE, FISH—4 pkgs, Meyer & Co, Prins der Nederlanden, Curacao
GOAT HAIR—50 bls, 28,000 lbs, Tattensfield Co, Saint Bede, Singapore
45 bls, 22,500 lbs, W H Wisner & Co, Saint Bede, Singapre
GRAPHITE—213 cks, 71,355 lbs, Mitsui & Co, Muncaster Castle, Singapore
GUM, ALOES—40 cs, 22,200 lbs, Suzarte & Whitney, Zulia, Marcaibo
10 bbls, R Desvernine, Prins der Nederlanden, Curacao
60 cs, 33,300 lbs, Suzarte & Whitney, Prins der Nederlanden, Curacao
73 cs, 40,515 lbs, G Amsinck & Co, Prins der Nederlanden, Curacao
107 cs, 59,385 lbs, G Amsnick & Co, Caracas, Curacao
ANIMI—10 cs, S Winterbourne & Co, Volodia, London
ARABIC—127 cs, C W Jacob & Allison, Kroonland, Liverpool
BENJAMIN—77 cs, 8,555 lbs, Peninsular Trading Agency, Muncaster Castle, Singapore
20 cs, 2,300 lbs, C B Richard & Co, Muncaster Castle, Singapore
104 cs, 11,969 lbs, Winter Sons & Co, Muncaster Castle, Singapore
COPAL—384 bgs, 57,600 lbs, Paterson, Boardman & Knapp, Muncaster Castle, Singapore
100 cs, 21,500 lbs, Winter Sons & Co, Muncaster Castle, Singapore
335 cs, 72,025 lbs, S Winterbourne & Co, Muncaster Castle ,Singapore
447 baskets, 102,810 lbs, S Winterbourne & Co, Muncaster Castle, Singapore
1,008 bgs, 151,200 lbs, S Winterbourne & Co, Muncaster Castle, Singapore
715 baskets, 164,450 lbs, L Littlejohn & Co, Muncaster Castle, Singapore
65 bgs, 9,750 lbs, L Littlejohn & Co, Muncaster Castle, Singapore
51 bgs, 7,650 lbs, Judson Freight & Forwarding Co, Royal Prince, Manila
20 cs, 4,200 lbs, Judson Freight & Forwarding Co, Royal Prince, Manila
68 bgs, 10,200 lbs, S Winterbourne & Co, Andania, Liverpool
210 bgs, 21,500 lbs, G W S Paterson & Co, Volodia, London
1,584 bgs, 237,600 lbs, A Klipstein & Co, Volodia, London
29 bgs, 4,350 lbs, S Winterbourne & Co, Volodia, London
DAMAR—75 cs, 16,125 lbs, Henderson & Korn, Muncaster Castle, Singapore
100 cs, 21,500 lbs, L Littlejohn & Co, Volodia, London
EUPHORBIUM—5 ser, Schieffelin & Co, Saint Bede, Singapore
GYPSUM—(Bulk) 1,100 tons, J B King & Co, Ontario, Windsor
(Bulk) 1,800 tons, J B King & Co, Canada, Windsor
HORSE HAIR—97 cs, 12,901 lbs, F W Von Stade, Muncaster Castle, Singapore
1 bl, 500 lbs, Cowdrey & Co, Santa Marta, Kingston
60 cs, 7,980 lbs, Polack Co, Saint Bede, Singapore
110 cs, 14,620 lbs, D C Andrews & Co, Saint Bede, Singapore
MANES—8,246 lbs, Belfour, Williamson & Co, Muncaster Castle, Singapore
HUMAN HAIR—50 cs, 6,650 lbs, Otto Gross, Muncaster Castle, Singapore
257 cs, 34,181 lbs, F H Cone, Muncaster Castle, Singapore
15 bls, 7,500 lbs, E T Seward, Muncaster Castle, Singapore
7 cs, 921 lbs, B C Ritchie & Co, Cretic, Genoa
19 bls, 9,500 lbs, Oliver & Co, Saint Bede, Singapore
145 cs, 19,285 lbs, Otto Gross, Saint Bede, Singapore
IRON, OXIDE—129 bgs, G Z Collins & Co, Wells City, Bristol
10 bbls, 12,250 lbs, G Z Collins & Co, Wells City, Bristol
31 cks, 37,975 lbs, J W Coulston & Co, Celtic, Liverpool
34 cks, 41,650 lbs, F A Reichard, Saxonia, Liverpool
LEAVES, MEDICINAL—60 bls, P H Petry & Co, Snowdonian, Marseilles
SENNA—206 bls, 58,710 lbs, P E Anderson & Co, Volodia, London
LIME, CARBONATE—239 cks, 126,500 lbs, National Aniline & Chem Co, Wells City, Bristol
CITRATE—46 cks, 6,670 lbs, Perry, Ryer & Co, Parima, Demerara
211 cks, 30,595 lbs, Alexander Brown & Co, Napoli, Genoa
JUICE—15 cks, 930 gls, H Lange, Parima, Demerara
25 bbls, 1,550 gls, A D Straus & Co, Parima, Demerara
6 cks, 372 gls, Van Dyk & Lindsay, Parima, Demerara
2 cks, 124 gls, Middleton & Co, Parima, Demerara
265 cks, 16,430 gls, Perry, Ryer & Co, Parima, Demerara
115 bbls, 5,865 gls, Perry, Ryer & Co, Parima, Demerara
1 bbl, 62 gls, Perry, Ryer & Co, Parima, Demerara
4 cs, Ferry, Ryer & Co, Parima, Demerara
2 cks, 124 gls, Gillespie Bros & Co, Parima, Demerara
LOGWOOD—(Bulk) 287 tons, Oakes Mfg Co, William C May, Kingston
CHIPS—7 bgs, H Marquardt & Co, Manchioneal, Kingston
STUMPS—(Bulk) 566½ tons, Oakes Mfg Co, William C May, Kingston
MACE—168 cs, 28,560 lbs, L Littlejohn & Co, Saint Bede, Singapore
MAGNESITE CALCINED—209 cks, 104,500 lbs, Frazer & Co, California, Glasgow
MANGANESE, ORE—850 bgs, 114,750 lbs, Takata & Co, Muncaster Castle, Singapore
(Bulk), 600 tons, A H Ringk & Co, Merton Hall, Calcutta
(Bulk), 500 tons, A H Ringk & Co, Suveric, Calcutta
(Bulk), 500 tons, A H Ringk & Co, Egyptian Transport, Calcutta
300 bgs, 40,500 lbs, W V N Powelson, Advance, Cristobal
MANJAK—215 bgs, J S Lamson & Bro, Parima, Demerara
MEDICINAL PREPARATIONS—14 cs, E Fougera & Co, Rochambeau, Bordeaux
24 pkgs, E Fougera & Co, Rochambeau, Bordeaux
2 cs, American Express Co, Rochambeau, Bordeaux
1 pkg, Mackey, Irons & Co, Minas Geraes, Santos
1 pkg, H A Hiran, Minas Geraes, Santos
9 cs, Burroughs, Wellcome & Co, Volodia, London
MYRABOLANS—1,000 pockets, 55,000 lbs, Haley, Hammond Co, Egyptian Transport, Colombo
NUTMEGS—129 cs, 8,385 lbs, Frame & Co, Muncaster Castle, Singapore
271 bgs, 33,875 lbs, Frame & Co, Muncaster Castle, Singapore
100 cs, 6,500 lbs, Wm Tappenbeck, Royal Prince, Manila
50 bgs, 6,250 lbs, L German & Co, Royal Prince, Manila
418 cs, 27,170 lbs, Van Loan & Co, Royal Prince, Manila
318 cs, 20,670 lbs, Van Loan & Co, Saint Bede, Singapore
100 cs, 6,500 lbs, Wm Tappenbeck, Saint Bede, Singapore
61 bgs, 7,625 lbs, Frame & Co, Saint Bede, Singapore
NUT KOLA—25 bgs, 5,000 lbs, McKesson & Robbins, Manchioneal, Kingston
NUX VOMICA—2,206 pockets, 220,600 lbs, Winter, Sons & Co, Egyptian Transport, Colombo
OIL, ANISEED—50 cs, 3,300 lbs, Frame, Leaycraft & Co, Saint Bede, Singapore
BAY—4 cs, 160 lbs, R Moelhausen, Parima, Demerara
CASSIA—30 cs, 1,980 lbs, A Chiris & Co, Muncaster Castle, Singapore
50 cs, 3,300 lbs, Frame, Leaycraft & Co, Saint Bede, Singapore
CASTOR—70 bbls, Lanman & Kemp, Tapajoz Apapz, Santos
CHAULENOGRAL—3 cs, Schieffelin & Co, Volodia, London
CHINA WOOD—6 bbls, Belfour, Williamson & Co, Muncaster Castle, Singapore
250 cks, 12,500 gls, Northwest Trading Co, Saint Bede, Singapore
ESSENTIAL—1 cs, G E Evans & Co, Rochambeau, Bordeaux
3 cs, P C Kuyper & Co, Rochambeau, Bordeaux
1 cs, J Wanamaker, Rochambeau, Bordeaux
4 cs, E Utard, Rochambeau, Bordeaux
9 cs, Park & Tilford, Rochambeau, Bordeaux
10 cs, M Levy, Rochambeau, Bordeaux
12 cs, A H Smith & Co, Rochambeau, Bordeaux
1 cs, Alex Murphy & Co, Rochambeau, Bordeaux
2 cs, D F Ferrieve, Strathspey, Bordeaux
12 cs, G Amsinck & Co, Toftwood, Bordeaux
2 cs, P F Ferrieve, Toftwood, Bordeaux
FISH—10 cks, W & S Job & Co, Parima, Demerara
LIME—21 cs, 1,428 lbs, H Lange, Parima, Demerara
25 cs, 1,564 lbs, F S Maynard & Sons, Parima, Demerara
7 cs, 486 lbs, Dodge & Olcott Co, Parima, Demerara
3 cs, 204 lbs, W J Bush & Co, Parima, Demerara
NEATSFOOT—1 cs, National Cold Storage Co, Caracas, Curacao
OLIVE—11 cks, 550 gls, Chas Friedenberg, Inc, San Guglielmo, Genoa
25 bbls, 1,250 gls, Italian Importing Co, Duca degli Abruzzi, Genoa
200 bbls, 10,000 lbs, Strohmeyer & Arpe Co, Duca degli Abruzzi, Genoa
17 bbls, 850 gls, J R Dagnano & Co, Cretic, Genoa
15 cks, 1,200 gls, A Alvino & Co, Cretic, Genoa
71 cks, 3,550 gls, Chas Friedenberg, Inc, Cretic, Genoa
15 bbls, 750 gls, Chas Friedenberg, Inc, Cretic, Genoa
18 cks, 900 gls, G Tarproni, Cretic, Genoa
18 cks, 900 gls, G Vibairo, Cretic, Genoa
20 cks, 1,000 gls, Gaetano Melodia, Cretic, Genoa
10 bbls, 500 gls, E Prankiolakan, Vasilefs Constantinos, Genoa
38 bbls, 1,900 gls, E G Rofos, Vasilefs Constantinos, Genoa
15 bbls, 750 gls, A Marano, Duca di Genoa, Genoa
OLIVE FOOTS OR SULP—250 bbls, 93,750 lbs, F B Vandegrift & Co, Orion, Seville
50 bbls, 18,750 lbs, Colgate & Co, Orion, Seville
ORANGE—2 cs, 100 lbs, Royal Bank of Canada, Manchioneal, Kingston
PALM—307 bbls, 41,445 lbs, Core & Herbert, Snowdonian, Marseilles
SOYA BEAN—6 bbls, 2,400 lbs, Belfour, Williamson & Co, Muncaster Castle, Singapore
PAINT, TOY—2 cs, F A O Schwarz, Volodia, London
5 cs, G A & E Meyer, Volodia, London
PEPPER, BLACK—434 bgs, 60,760 lbs, L Littlejohn & Co, Muncaster Castle, Singapore
WHITE—324 bgs, 45,360 lbs, Old & Wallace, Saint Bede, Singapore
739 bgs, 103,460 lbs, Henderson & Korn, Saint Bede, Singapore
PIMENTO—77 bgs, 10,395 lbs J R Marquette, Jr, Manchioneal, Kingston
275 bgs, 37,125 lbs, Colonial Bank, Manchioneal, Kingston
PITCH, MINERAL—67 cks, Andrew Baxter, California, Glasgow
PLUMBAGO—171 bbls, 99,180 lbs, H J Baker & Bro, Merton Hall, Colombo
160 bbls, 92,800 lbs, C B Richards & Co, Merton Hall, Colombo
364 bbls, 211,120 lbs, C B Richards & Co, Suveric, Colombo
350 bbls, 203,000 lbs, H W Peabody & Co, Suveric, Colombo
514 bbls, 298,120 lbs, E S Kuh & Valk Co, Suveric, Colombo
95 bbls, 55,100 lbs, J F Starkey & Co, Egyptian Transport, Colombo
600 bbls, 348,000 lbs, H W Peabody & Co, Egyptian Transport, Colombo
908 bbls, 526,640 lbs, Paterson, Boardman & Knapp, Egyptian Transport, Colombo
94 bbls, 54,520 lbs, E S Kuh & Valk Co, Egptian Transport, Colombo
400 bbls, 232,000 lbs, Winter, Sons & Co, Egyptian Transport, Colombo
ROOTS, IPECAC—7 bls, Heilbron, Wolff & Co, Santa Marta, Kingston
1 bg, 90 lbs, Jacob Harris, Minas Geraes, Santos
2 pkgs, Schute, Bunemann & Co, Sosua, Porto Colombia
1 cs, 200 lbs, Gontard & Co, Advance, Cristobal
5 bgs, 450 lbs, L B Jackson, Advance, Cristobal
2 bgs, 180 lbs, A Held, Almirante, Kingston
7 bls, Heilbron, Wolff & Co, Almirante, Kingston
LICORICE.—13 bls, 4,550 lbs, Arnhold, Karberg & Co, Saint Bede, Singapore
MEDICINAL.—1 pkg, A D Straus & Co, Minas Geraes, Santos
RHUBARB.—32 cs, 6,880 lbs, P E Anderson & Co, Saint Bede, Singapore
31 cs, 6,665 lbs, Dodge & Olcott Co, Saint Bede, Singapore
SAGO FLOUR.—735 bgs, 106,575 lbs, Stein, Hirsh & Co, Muncaster Castle, Singapore
732 bgs, 106,140 lbs, Stein, Hirsh & Co, Royal Prince, Manila
SAND.—90 cs, Tice & Lynch, Strathspey, Bordeaux
50 cks, G W Sheldon & Co, Strathspey, Bordeaux
SEEDS, ANNATTO—9 bgs, 7,070 lbs, A M Patterson, Manchioneal, Kingston
8 bgs, 1,840 lbs, New York & West Indies Trading Co, Manchioneal, Kingston
CARAWAY.—689 bgs, 70,680 lbs, Levy & Lewis Co, Jelling, Buenos Aires
CARDAMOM—11 cs, 990 lbs, Old & Wallace, Merton Hall, Colombo
8 cs, 720 lbs, C H Demerest, Merton Hall, Colombo
30 cs, 2,700 lbs, Dodge & Olcott Co, Merton Hall, Colombo
MEDICINAL.—33 bgs, J L Hopkins & Co, Snowdonian, Marseilles
SESAME—10 bgs, W H Stiner & Sons, Saint Bede, Singapore
SHELLAC—256 bgs, 38,704 lbs, Ralli Bros, Tasmania, Calcutta
100 bgs, 16,400 lbs, Wm Zinsser & Co, Tasmania, Calcutta
666 bgs, 100,224 lbs, Berry Bros, Tasmania, Calcutta
50 bgs, 8,200 lbs, H W Peabody & Co, Merton Hall, Calcutta
100 bgs, 16,400 lbs, Wm Zinsser & Co, Merton Hall, Calcutta
1,500 bgs, 246,000 lbs, Rogers & Pyatt Shellac Co, Merton Hall, Calcutta
900 bgs, 147,600 lbs, Marx & Rawolle, Merton Hall, Calcutta
225 chests, 36,900 lbs, Marx & Rawolle, Merton Hall, Calcutta
2,290 bgs, 3,653,993 lbs, Rogers & Pyatt Shellac Co, Suveric, Calcutta
100 bgs, 16,400 lbs, The Mac Lac Co, Suveric, Calcutta
346 bgs, 56,744 lbs, Marx & Rawolle, Suveric, Calcutta
210 bgs, 34,440 lbs, Smith & Shipper, Suveric, Calcutta
SEEDLAC—95 bgs, 15,580 lbs, Rogers & Pyatt Shellac Co, Suveric, Calcutta
STICKLAC—250 bgs, 41,000 lbs, Ralli Bros, Tasmania, Calcutta
SOAPSTONE—69 bgs, F L Kraemer & Co, Suveric, Colombo
SODA, BENZOATE—20 cks, American Express Co, Rochambeau, Bordeaux
CACODYLATE—1 cs, C L Hulsking, Volodia, London
NITRATE—31,031 bgs, 62,062 qtls, H J Baker & Bro, Van der Duyon, Iquique
PYROSULPHATE—16 dms, A Seligmann, Celtic, Liverpool
SPONGES—29 bls, 2,900 lbs, National Sponge & Chamois Co, Morro Castle, Havana
166 cs, 16,600 lbs, Lasker & Bernstein, Muncaster Castle, London
SUMAC—2,100 bgs, 336,000 lbs, Nafra & Co, Kaupanger, Palermo
EXTRACT—25 cks, Geigy-ter Meer Co, Cretic, Genoa
TALC—10 cs, A H Smith & Co, Rochambeau, Bordeaux
TALLOW—20 bbls, 8,000 lbs, Fidanque Bros & Son, Advance, Cristobal
TAMARINDS—1 bbl, Brown Bros & Co, Parima, Demerara
40 bbls, M J Walsh & Co, Parima, Demerara
22 bbls, Middleton & Co, Parima, Demerara
TAPIOCA FLOUR—2,344 bgs, 375,040 lbs, Perry, Ryer & Co, Muncaster Castle, Singapore
1,469 bgs, 235,040 lbs, L Littlejohn & Co, Muncaster Castle, Singapore
PEARL—368 bgs, 58,880 lbs, Stein, Hirsh & Co, Royal Prince, Manila
783 bgs, 125,280 lbs, L Littlejohn & Co, Saint Bede, Singapore
TARTAR, CRUDE—40 cks, 31,200 lbs, Tartar Chem Co, Celtic, Liverpool
65 cks, 49,140 lbs, Chas Pfizer & Co, Rochambeau, Bordeaux
49 bgs, 8,575 lbs, Tartar Chem Co, Sherman, Kingston
WAX—6 pkgs, South American Shipping Co, Minas Geraes, Santos
BEES—2 cs, 600 lbs, Judson Freight & Forwarding Co, Royal Prince, Manila
12 bls, Robinson, Bardsley & Co, St Croix, Lisbon
CARNAUBA—397 bgs, 71,460 lbs, Strohmeyer & Arpe Co, Atahualpa, Maranham
PARAFFINE—35 bgs, 4,900 lbs, Moore & Munger, Muncaster Castle, Singapore
480 bgs, 67,200 lbs, Strohmeyer & Arpe Co, Queen Margaret, Liverpool
WOOD, ROSE—100 logs, W R Grace & Co, Terence, Santos
51 logs, R Desvernine, Prins der Nederlanden, Curacao
1 log, G Amsinck & Co, Advance, Cristobal
1 log, W R Grace & Co, Advance, Cristobal
VERA—74 pcs, Henderson & Co, Prins der Nederlanden, Curacao

IMPORTS AT NEW YORK IN TRANSIT TO OTHER CITIES.

Boston.

CLAY, CHINA—Bulk, 313 tons, 5 cwt, J Richardson Co, Cornish Point, Cardiff
101 cks, 10 tons, J Richardson Co, Cornish Point, Cardiff
Bulk, 522 tons, 45 cwt, J B Moore & Co, Cornish Point, Cardiff

Bracebridge.

MANGANESE ORE—2,500 bgs, Perry, Ryer & Co, Muncaster Castle, Singapore

Buffalo.

SEEDS—400 bls, American Express Co, Eastgate, Havre

Chicago.

EGG YOLK—50 cs, Bernard Judae & Co, Muncaster Castle, Singapore
SEEDS—4 bgs, G W Sheldon & Co, Toftwood, Bordeaux
13 bgs, Toftwood, Bordeaux
SPONGES—12 bls, Peter Van Schaak Sons, Havana, Havana
WAX, CERESINE—10 bgs, M L Barrett & Co, Volodia, London

Columbus, S. C.

HUMAN HAIR YARN—29 bgs, Queen Margaret, Liverpool

Detroit.
SEEDS—258 bgs, American Express Co, Toftwood, Bordeaux

Montreal.
GLUE—50 bls, American Express Co, Toftwood, Bordeaux

Philadelphia.
HORSE TAILS—110 cs, S M Brachman & Co, Saint Bede, Singapore
LEAVES, MEDICINAL—81 bls, R F Downing & Co, Duca degli Abruzzi, Genoa
SEEDS—148 bgs, J L Vandiver, Toftwood, Bordeaux

Richmond.
SEEDS—400 bls, American Express Co, Eastgate, Havre
470 bls, American Express Co, Toftwood, Bordeaux

San Francisco.
SEEDS—200 bls, American Express Co, Eastgate, Havre

St. Louis.
SPONGES—4 bgs, Vaselefs Constantinos, Genoa

Toronto.
ANILINE COLORS—5 cks, T D Wardlow, Toftwood, Bordeaux

Cardenas.
PAINT—12 cks, Saxonia, Liverpool

Cuba.
PERFUMERY—3 cs, Toftwood, Bordeaux

Genoa.
LOGWOOD EXTRACT—50 cks, Manchioneal, Kingston

Guatemala.
GLUE—8 bgs, Volodia, London

Havana.
DRUGS—7 cs, Strathspey, Bordeaux
FLOWERS, MEDICINAL—2 bgs, Duca degli Abruzzi, Genoa
MEDICINAL PREPARATIONS—51 cs, Duca degli Abruzzi, Genoa
OIL, CASTOR—14 cs, Duca degli Abruzzi, Genoa

Liverpool.
LOGWOOD EXTRACT—155 cks, West Indies Chem Works, Manchioneal, Kingston

Maracaibo.
CHEMICAL PREPARATIONS—1 cs, American Express Co, Rochambeau, Bordeaux
DRUGS—1 cs, M A Bellosa, Toftwood, Bordeaux
PERFUMERY—10 cs, American Express Co, Rochambeau, Bordeaux

Marseilles.
LOGWOOD EXTRACT—165 cks, Manchioneal, Kingston

Mayaguez.
CHEMICAL PREPARATIONS—11 cs, Volodia, London
5 cks, Volodia, London
MEDICINAL PREPARATIONS—16 cs, Duca degli, Abruzzi, Genoa
PERFUMERY—5 cs, American Express Co, Rochambeau, Bordeaux
PILLS—1 cs, Volodia, London
24 cs, Roger & Gallet, Rochambeau, Bordeaux
LINSEED—6 dms, American Trading Co, Saint Bede, Singapore
PEANUT—105 dms, American Trading Co, Saint Bede, Singapore
PEPPER, BLACK—84 bgs, 11,760 lbs, L German & Co, Muncaster Castle, Singapore
654 bgs, 91,560 lbs, Smith & Shipper, Muncaster Castle, Singapore
167 bgs, 23,380 lbs, J W Green & Co, Royal Prince, Manila
404 bgs, 56,560 lbs, L Littlejohn & Co, Saint Bede, Singapore
WHITE—143 bgs, 20,020 lbs, Smith & Shipper, Muncaster Castle, Singapore
252 bgs, 35,280 lbs, J H Recknagel & Sons, Saint Bede, Singapore
577 bgs, 80,780 lbs, Old & Wallace, Saint Bede, Singapore
SPONGES—21 bls, 2,100 lbs, A Isaacs & Co, Esperanza, Nassau

BOSTON IMPORTS.

ACID, TARTARIC—1 cs, Weir Specialty Co, Colonian, London
BRISTLES—9 cks, J L Whiting-J J Adams Co, Colonian, London
8 cks, J C Pushee & Sons, Colonian, London
4 cs, 8 cks, Colonian, London
CHALK—400 tons, Colonian, London
COLORS—103 cks, S Levenstein & Co, Devonian, Liverpool
ESSENCES—3 cs, Weir Specialty Co, Colonian, London
FERRO MANGANESE—60 tons, Rogers Bros & Co, Devonian, Liverpool
GAMBIER—191 bls, Colonian, London
GLASS, WINDOW—9 cs, Boston Plate & Window Glass Co, Devonian, Liverpool
100 cs, Devonian, Liverpool
GLUE—9 bbls, F W Bedell, Halifax, Halifax
GUM TRAGACANTH—16 bgs, Colonian, London
INDIGO—18 cks, F Leyland & Co, Colonian, London
MARINE GLUE PITCH—100 cs, L W Ferdinand & Co, Colonian, London
OIL, COD—14 cks, Oleic Co, Halifax, Halifax
OLIVE—1 cs, Weir Specialty Co, Colonian, London
SHELLAC—25 cks, Colonian, London
SOAP—1 cs, Devonian, Liverpool
SODA NITRATE—47,849 bgs, W R Grace & Co, Chimu, Chile
16,152 bgs, Baring Bros & Co, Chimu, Chile
TAPIOCA FLOUR—505 bgs, First National Bank, Colonian, London

BALTIMORE IMPORTS.

MANGANESE ORE—5,000 tons, Penn-Mary Steel Company, Chiswick, Santiago de Cuba
6,000 tons, Gustavus & Co, Columbian, Rio de Janeiro

PHILADELPHIA IMPORTS.

BARK, CINCHONA—36 bls, Meteor, London
BONES—129 bgs, Hafleigh & Co, Manchester Port, Manchester
ROOTS, SCOPOLA—62 bls, Smith, Kline, French & Co, Canada Maru, Kobe
SULPHUR—1,500 bls, M Furnya Co, Canada Maru, Yokohama
TIN, SLAB—6,500 slabs, U S Steel Prod Co, Canada Maru, Hong Kong

SAN FRANCISCO IMPORTS.

COPRA—15,872 sks, Stanley Dollar, Manila
1,426 sks, Sonoma, Pago Pago
OIL, SOYA BEAN—200 bbls, Yucatan, Shanghai
COCOANUT—200 bbls, Yucatan, Shanghai
FISH—4,000 cs, Yucatan, Shanghai
WOOD—670 cks, Yucatan, Shanghai
WHITING—668 bbls, Pacific, Aalborg

NEWPORT NEWS IMPORTS.

FERRO MANGANESE—303 tons, Kercy Range, Liverpool
OIL, WHALE—75 bbls, 3,750 gls, Thor I from Sea

NORFOLK IMPORTS.

SODA, NITRATE—73,700 sks, 7,370 tons, Guernsey, Mejillones
67,033 sks, 6,793 tons, Honohula, Iquique

EXPORTS—NEW YORK.

ACETANILID—100 lbs, $150, Australia
ACID, ACETIC—800 lbs, $138, Venezuela
27,975 lbs, $5,595, Du East Indies
616 lbs, $64, Peru
3,850 lbs, $550, Chile
BORIC—280,000 lbs, $40,000, England
3,985 lbs, $578, Russia in Europe
1,680 lbs, $249, Cuba
CARBOLIC—100 lbs, $73, Cuba
220 lbs, $183, Argentine
550 lbs, $373, Brazil
CARBOLIC CRYSTALS—99 lbs, $74, Brazil
110 lbs, $167, Australia
117,510 lbs, $73,445, France
CHROMIC—400 lbs, $280, Portuguese Africa
CITRIC—112 lbs, $90, Colombia
190 lbs, $128, Nicaragua
683 lbs, $464, Brazil
2,454 lbs, $1,535, Philippine Is
22,142 lbs, $19,316, Russia in Europe
MURIATIC—47,570 lbs, $961, Cuba
11,365 lbs, $496, Trinidad
3,190 lbs, $132, Peru
OXALIC—9,630 lbs, $6,012, France
100 lbs, $66, Costa Rica
6,851 lbs, $5,550, Argentine
218 lbs, $140, Spain
PICRIC—916,939 lbs, $889,531, Russia in Europe
542,970 lbs, $469,100, France
PYROGALLIC—200 lbs, $700, England
SALICYLIC—20 lbs, $40, [illegible]
SULPHURIC—23,460 lbs, $840, Colombia
4,787 lbs, $246, Brazil
1,230 lbs, $69, Cuba
TARTARIC—110 lbs, $77, Brazil
5,500 lbs, $3,593, Chile
220 lbs, $149, Mexico
500 lbs, $260, Chile
227 lbs, $175, Peru
ALCOHOL—1,237,837 pf gls, $339,306, France
446,436 pf gls, $155,447, France
1,750 pf gls, $516, Norway
384 pf gls, $108, Brazil
1,437,397 pf gls, $382,798, France
4,850 bbls, Chankyoon, Marseilles
1,144 bbls, Portland, Havre
370 bbls, Alber W Semler, Bordeaux
WOOD—14,434 gls, $3,629, France
5,500 gls, $3,250, France
AMMONIA, ANHYDROUS—$638, Br India
NITRATE—$126,292, Italy
$50,141, France—$15,804, Russia in Europe
ARSENIC—$676, Italy
BAKING POWDER—9,236 lbs, $3,672, Scotland
600 lbs, $234, Panama
370 lbs, $102, Paraguay
8,880 lbs, $3,149, British South Africa
12,520 lbs, $3,680, British South Africa
1,200 lbs, $258, Portuguese Africa
886 lbs, $404, Chile
BARYTES—$479, England
BISMUTH, SUBNITRATE—$105, Portuguese Africa
BLEACH—$423, China
BRONZE POWDER—$980, England—$550, Cuba
CALCIUM CARBIDE—4,000 lbs, $155, Colombia
10,000 lbs, $260, Bermuda
118,890 lbs, $3,126, Straits Settlements
2,000 lbs, $84, Costa Rica
25,500 lbs, $877, San Domingo
2,000 lbs, $118, Chile
CANDLES—15,190 lbs, $1,974, Nicaragua
6,900 lbs, $629, Salvador
1,120 lbs, $120, Cuba
9,135 lbs, $941, French West Indies
1,895 lbs, $205, Costa Rica
1,100 lbs, $101, Honduras
1,340 lbs, $194, Panama
2,905 lbs, $268, British West Indies
3,675 lbs, $451, San Domingo
1,205 lbs, $150, Dutch Guiana
26,450 lbs, $2,005, Canary Islands
CARBON BLACK—$4,000, France
$1,696, Sweden—$3,679, England
$135, Scotland
CHLORAL HYDRATE—$4,614, England
CHLORINE—43,400 lbs, $6,501, Russia in Europe
CHLOROFORM—$244, Uruguay—$320, Chile
COLORS, DRY—$108, Mexico—$637, Cuba
$395, Argentine—$202, Uruguay
$154, France—$39,232, England
$234, Honduras—$1,048, Cuba
$96, Argentine—$800, Chile
$477, Venezuela—$152, Philippine Islands
$325, England—$114, Cuba
CREAM OF TARTAR—$573, British South Africa
DEXTRINE—4,282 lbs, $231, British South Africa
168,000 lbs, $7,590, Italy
2,240 lbs, $108, British India
DYEWOOD EXTRACT—$12,737, Italy
$1,620, England—$2,640, Argentine
$1,554, Chile
EPSOM SALTS—5,842 lbs, $220, Brazil
2,350 lbs, $82, Chile
2,000 lbs, $75, Mexico
12,500 lbs, $509, Chile
ETHER—$404, Uruguay—$590, Chile
FERRO SILICON—230 tons, $31,000, Russia Europe
FORMALDEHYDE—60,950 lbs, $6,387, France
2,360 lbs, $271, French West Indies
18,800 lbs, $2,569, France
39,075 lbs, $3,908, France
2,240 lbs, $720, Straits Settlements
7,600 lbs, $1,160, Australia
8,750 lbs, $1,084, France
6,000 lbs, $900, Norway
42,400 lbs, $4,029, France
1,500 lbs, $209, Spain
3,200 lbs, $368, Trinidad
4,850 lbs, $776, Chile
GLASS, PLATE—1,500 sq ft, $1,546, Chile
988 sq ft, $606, Cuba
1,000 sq ft, $357, Colombia
WINDOW AND CYLINDER—405 bxs, $1,[illegible] England
826 bxs, $4,490, Colombia
28 bxs, $200, Brazil
1,000 bxs, $4,766, Chile
575 bxs, $3,446, Philippine Islands
248 bxs, $1,156, British South Africa
18 bxs, $120, Cuba
1,378 bxs, $4,857, Chile
25 bxs, $163, Aden
140 bxs, $651, British India
420 bxs, $1,567, British South Africa
60 bxs, $2,718, Canary Islands
251 bxs, $1,185, Portuguese Africa
739 bxs, $2,444, Chile
740 bxs, $3,300, British India
610 bxs, $3,345, Australia
GLUCOSE—590,120 lbs, $17,267, France
11,200 lbs, $268, Norway
16,950 lbs, $483, Portugal
1,220,400 lbs, $34,758, England
233,980 lbs, $6,951, Scotland
8,200 lbs, $223, Chile
17,265 lbs, $494, China
474,000 lbs, $13,773, France
GLUE—11,200 lbs, $809, Norway
400 lbs, $57, Salvador
400 lbs, $44, Australia
2,375 lbs, $290, Peru
GLYCERINE—1,297 lbs, $697, Argentine
14,675 lbs, $6,362, Chile
1,240 lbs, $650, England
12,165 lbs, $6,905, Chile
GRAPE SUGAR—123,200 lbs, $3,025, France
224,000 lbs, $7,840, England
560,000 lbs, $16,545, Scotland
336,000 lbs, $8,600, England
GREASE, LUBRICATING—$600, France
$80, Spain—$9,872, England
$2,166, Cuba—$161, French West Indies
$118, Argentine—$499, Peru
$234, Chile—$3,744, Straits Settlement
$2,682, Hong Kong—$1,086, Philippine Islands
$3,578, British South Africa—$223, Portuguese Africa
$5,490, Portugal—$554, Chile
$387, Peru—$240, British India
$1,788, British South Africa—$4,221, Portuguese Africa
PETROLEUM—1,320 lbs, $121, Cuba
SOAP—$9,187, Cuba—$2,912, England
HEXAMETHYLENETETRAMINE—[illegible] Switzerland—$350, England
HYDROGEN PEROXIDE—$388, Cuba
$436, Brazil—$120, Venezuela
$215, Australia—$112, Philippine Islands
LAMP BLACK—$2,880, France
$269, Straits Settlements—$509, Panama
LEAD—11 tons, $2,733, Finland
1,368 tons, $164,973, Russia in Europe
224 tons, $26,874, France
56 tons, $8,400, Netherlands
100 tons, $19,082, Norway
3 tons, $439, Cuba
ACETATE—$339, Portugal—$1,654, England
ARSENATE—$976, British South Africa
LINSEED CAKE—1,643 tons, $49,286, Denmark
3,299 tons, $118,720, Netherlands
4,901 tons, $179,000, Netherlands
336 tons, $11,588, England
262 tons, $7,856, Denmark
1,284 sks, Tuscania, Glasgow
621 sks, Chicago City, Bristol
3,827 sks, Noordam, Rotterdam
545 sks, Poeldyk, Rotterdam
1,389 sks, Laconia, Liverpool
5,100 sks, Westerdyk, Rotterdam
1,228 sks, Dan a, Copenhagen
MEAL—29 tons, $966, Barbadoes
16 tons, $725, Trinidad
LITHARGE—$24,556, Russia in Europe
OIL, CASTOR—61 gls, $76, Honduras
120 gls, $147, Nicaragua
1,030 gls, $1,418, Cuba
600 gls, $1,400, Greece
4,656 gls, $5,949, Chile

CREAM OF TARTAR. TARTARIC ACID.

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Port Paix.
PERFUMERY—1 cs, American Express Co, Rochambeau, Bordeaux

San Juan.
PERFUMERY—14 cs, American Express Co, Rochambeau, Bordeaux

WAREHOUSED IN BOND.

New York.
ALBUMEN, EGG—536 cs, 107,200 lbs, Stein, Hirsh & Co, Muncaster Castle, Singapore
100 cs, 20,000 lbs, A Klipstein & Co, Muncaster Castle, Singapore
22 cs, 4,400 lbs, T M Duche & Sons, Saint Bede, Singapore
115 cs, 46,000 lbs, Ayres, Bridges & Co, Saint Bede, Singapore
948 cs, 189,600 lbs, Stein, Hirsh & Co, Saint Bede, Singapore
200 cs, 40,000 lbs, A Klipstein & Co, Saint Bede, Singapore
BALSAM, COPAIBA—43 cs, 3,440 lbs, Suzarte & Whitney, Zulia, Maracaibo
13 cs, 1,040 lbs, General Export & Com Co, Zulia, Maracaibo
3 cs, 240 lbs, G Amsinck & Co, Prins der Nederlanden, Curacao
25 cs, 2,000 lbs, Dodge & Olcott Co, Minas Geraes, Santos
22 cs, 1,760 lbs, G Amsinck & Co, Sosua, Porto Colombia
13 cs, 1,040 lbs, Dodge & Olcott Co, Advance, Cristobal
2 cs, 160 lbs, Rafael del Castillo & Co, Almirante, Kingston
BRISTLES—268 cs, 35,644 lbs, Huesmann & Co, Muncaster Castle, Singapore
216 cs, 28,728 lbs, F H Cone, Muncaster Castle, Singapore
100 cs, 13,300 lbs, Huesmann & Co, Muncaster Castle, Singapore
99 cs, 13,167 lbs, Huesmann & Co, Saint Bede, Singapore
157 cs, 20,881 lbs, F H Cone, Saint Bede, Singapore
CASSIA—2,000 bls, 160,000 lbs, L German & Co, Muncaster Castle, Singapore
250 bls, 20,000 lbs, Dodwell & Co, Muncaster Castle, Singapore
COCOANUT DES—399 bgs, 49,875 lbs, Wood & Selick, Suveric, Colombo
200 cs, 25,000 lbs, Habicht, Braun & Co, Egyptian Transport, Colombo
100 cs, 12,500 lbs, Wood & Selick, Egyptian Transport, Colombo
50 cs, 6,250 lbs, C H Demerest, Egyptian Transport, Colombo
100 cs, 12,500 lbs, W R Grace & Co, Saxonia, Liverpool
GLYCERINE—68 dms, 70,040 lbs, American Trading Co, Terrence, Santos
HORSE HAIR—38 cs, 5,054 lbs, F H Cone, Saint Bede, Singapore
MACE—10 cs, 1,700 lbs, J W Phyfe & Co, Royal Prince, Manila
10 cs, 1,700 lbs, J W Phyfe & Co, Saint Bede, Singapore
OIL, CASSIA—20 cs, 1,320 lbs, C G Euler, Muncaster Castle, Singapore
40 cs, 2,640 lbs, Wm Tappenbeck, Saint Bede, Singapore
ESSENTIAL—51 cs C Baez, Rochambeau, Bordeaux
CHALK, BLOCK—1 lot, Meteor, London
COLOR, DRY—23 cks, Meteor, London
EARTH, FULLER'S—428 bgs, Hammill & Gillespie, Meteor, London
FERRO MANGANESE—400 tons, Manchester Port, Manchester
IRON OXIDE—15 cks, J F Lewis & Bro, Manchester Port, Manchester
LOGWOOD—1,600 tons, American Dyewood Co, Vitalia, Frontera
1,430 tons, H Marquardt & Co, Rosemount, Laguna
PETROLEUM—Bulk, 63,090 bbls, Huastera Pet Co, J M Danziger, Tampico
PYRITES—6,698 tons, Penna Salt Mfg Co, Rosalie, Huelva
SODA—1 cs, Powers-Weightman-Rosengarten Co, Meteor, London

NEW ORLEANS IMPORTS.

PETROLEUM, CRUDE—14,195 bbls, Britannia, Tampico

SEATTLE IMPORTS.

BRISTLES—55 cs, Chosen Maru, Shanghai
25 cs, Chosen Maru, Shanghai
50 cs, Fred H Cone, Canada Maru, Tientsin
CAMPHOR, REFINED—100 cs, L C Hopkins & Co, Chosen Maru, Kobe
450 cs, L C Hopkins & Co, Canada Maru, Kobe
10 cs, Thomsen & Co, Canada Maru, Kobe
CAMOMILE FLOWERS—90 cs, Parke, Davis & Co, Chosen Maru, Kobe
IODIDE OF POTASSIUM—10 cs, Lehn & Fink, Canada Maru, Kobe
MENTHOL CRYSTALS—10 cs, Lehn & Fink, Canada Maru, Kobe
10 cs, H M Luden & Co, Canada Maru, Kobe
OIL—50 cks, American Trading Co, Chosen Maru, Shanghai
OILS, COTTONSEED—10 bbls, Mitsui & Co, Chosen Maru, Shanghai
COD—1,000 cs, Rogers, Brown & Co, Chosen Maru, Kobe
HERRING—2,000 cs, Rogers, Brown & Co, Chosen Maru, Kobe
HERRING, PALE—1,000 cs, Rogers, Brown & Co, Chosen Maru, Kobe
SOYA BEAN—1,000 cs, Canada Maru, Kobe
690 bbls, L C Gilleapie & Sons, Chosen Maru, Hankow
100 bbls, Mitsui & Co, Canada Maru, Kobe
WOOD—575 cks, G W S Patterson & Co, Chosen Maru, Hankow
732 cks, J T Steeb & Co, Chosen Maru, Hankow
1,000 cks, Mitsui & Co, Chosen Maru, Hankow
1,000 bbls, H W Peabody & Co, Chosen Maru, Hankow
POWDER, BRONZE—15 cs, T Plessner, Chosen Maru, Kobe
15 cs, Baer Bros & Co, Canada Maru, Kobe
PYRETHRUM FLOWERS—75 bls, Gilpin, Longdon & Co, Canada Maru, Kobe
4 bbls, Smith, Kline, French & Co, Canada Maru, Kobe
PEPPERMINT OIL—1 cs, Thomsen & Co, Canada Maru, Kobe

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Niagara Alkali Company, Niagara Falls, New York

For the Sale of their

Bleaching Powder and Caustic Soda

20 gls, $56, Salvador
COAL TAR—555 gls, $1,777, Portugal
1,690 gls, $8,190, France
2,000 gls, $3,120, Italy
200 gls, $574, Portugal
COCOANUT—$1,495, Brazil
CORN—249,600 lbs, $22,646, Italy
51,360 lbs, $4,874, Jamaica
48,000 lbs, $4,638, Argentine
29,545 lbs, $2,695, Barbados
10,380 lbs, $1,484, Argentine
142,465 lbs, $12,954, British Guiana
10,900 lbs, $1,002, Uruguay
3,195 lbs, $379, Dutch West Indies
35,100 lbs, $3,415, British South Africa
COTTONSEED—1,165 lbs, $141, Guatemala
38,200 lbs, $4,626, Panama
4,500 lbs, $515, Mexico
28,730 lbs, $2,495, Jamaica
149,635 lbs, $16,076, Cuba
1,260 lbs, $152, Hayti
3,750 lbs, $325, Argentine
39,600 lbs, $4,966, Uruguay
2,250 lbs, $226, British South Africa
57,295 lbs, $6,585, Norway
2,925 lbs, $339, Salvador
1,080 lbs, $132, Jamaica
3,905 lbs, $435, Cuba
84,000 lbs, $9,164, French West Indies
44,140 lbs, $4,162, Brazil
8,000 lbs, $826, British Guiana
27,080 lbs, $4,100, Sweden
1,345 lbs, $144, Nicaragua
28,295 lbs, $3,105, Panama
124,160 lbs, $13,384, Cuba
2,040 lbs, $257, Dutch West Indies
2,250 lbs, $273, Brazil
2,250 lbs, $280, Guatemala
44,575 lbs, $5,192, Panama
54,070 lbs, $5,075, Cuba
4,000 lbs, $501, Chile
40,500 lbs, $4,469, British South Africa
2,500 bbls, Noordam Rotterdam
1,100 bbls, Poledyk, Rotterdam
200 bbls, Milazzo, Genoa
1,000 bbls, Westerdyk, Rotterdam
FISH—117 gls, $70, Cuba
LARD—2,750 gls, $2,480, Italy
600 gls, $721, Peru
400 bbls, Milazzo, Genoa
LINSEED—749 gls, $541, Mexico
80 gls, $67, Hayti
1,910 gls, $1,760 Chile
595 gls, $474, Colombia
100 gls, $86, Ecuador
110 gls, $99, Costa Rica
40 gls, $34, Honduras
200 gls, $160, Salvador
750 gls, $570, Cuba
450 gls, $262, French West Indies
70 gls, $59, Argentine
2,767 gls, $2,289, Brazil
450 gls, $258, Peru
285 gls, $230, Venezuela
235 gls, $172, British West Indies
75 gls, $67, San Domingo
LUBRICATING—527,920 gls, $113,056, France
88,500 gls, $12,833, Italy
25,500 gls, $3,800, Spain
30,450 gls, $6,326, England
475 gls, $122, Costa Rica
650 gls, $284, Guatemala
300 gls, $129, Panama
700 gls, $172, Salvador
4,045 gls, $1,921, Cuba
300 gls, $101, Hayti
521,800 gls, $135,368, Argentine
18,510 gls, $3,636, Chile
2,290 gls, $523, Colombia
855 gls, $253 Peru
8,565 gls, $2,608, Uruguay
37,370 gls, $8,702, Australia
13,590 gls, $4,467, British South Africa
7,700 gls, $2,200, Portuguese Africa
530,150 gls, $74,105, France
13,750 gls, $1,925, Portugal
41,100 gls, $5,754, Spain
946,205 gls, $174,303, England
60,170 gls, $9,204, Scotland
380 gls, $85, Panama
1,115 gls, $314, Jamaica
17,685 gls, $5,618, Cuba
1,640 gls, $647, French West Indies
9,880 gls, $2,919, Argentine
2,485 gls, $584, Brazil
13,335 gls, $2,290, Chile
5,715 gls, $1,160, Peru
10,080 gls, $2,722, France
710 gls, $203, Bermuda
425 gls, $190, Cuba
550 gls, $254, Dutch West Indies
6,025 gls, $1,735, Brazil
2,200 gls, $669, Chile
450 gls, $106, Ecuador
415 gls, $171, Peru
805 gls, $325, Venezuela
6,500 gls, $2,000, China
82,535 gls, $16,059, Straits Settlements
3,060 gls, $495, Dutch East Indies
32,805 gls, $13,197, Hong Kong
12,125 gls, $2,970, Philippine Islands
229,040 gls, $49,865, British South Africa
5,530 gls, $1,110, Portuguese Africa
8,885 gls, $2,575, France
27,080 gls, $6,359, England
1,465 gls, $407, British West Indies
1,435 gls, $294, Cuba
9,105 gls, $2,423, Chile
1,035,705 gls, $113,925, British India
8,955 gls, $2,024, Australia
57,150 gls, $19,473, British South Africa
1,500 gls, $270, Canary Islands
25,545 gls, $6,717, Portuguese Africa
569 bbls, Chicago City, Bristol
704 bbls, Melford Hall, Manchester
1,039 bbls, Chalkydon, Marseilles
1,567 bbls, Noordam, Rotterdam
255 bbls, Patria, Naples
1,897 bbls, Milazzo, Genoa
6,562 bbls, Elef K Venizelos, Genoa
8,750 bbls, Mae, Bristol
65 bbls, Westerdyk, Rotterdam
3,477 bbls, Dania, Copenhagen
3,316 bbls, Raphael, Manchester
1,741 bbls, Regina d'Italie, Genoa
LUBRICATING, PETROLEUM—7,490 gls, $1,408, Spain
7,240 gls, $2,450, Sweden
$15 gls, $596, England
1,015 gls, $315, Nicaragua
560 gls, $188, Colombia
5,220 gls, $500, Newfoundland
1,000 gls, $289, Cuba
2,560 gls, $268, Brazil
4,000 gls, $1,700, Portugal
MUTTON—11,245 gls, $12,065, Netherlands
250 gls, $222, Greece
NEATSFOOT—883 gls, $733, France
OLEO—221,650 lbs, $28,827, England
77,155 lbs, $10,950, Newfoundland
2,985 lbs, $354, Cuba
3,407,232 lbs, $459,814, Netherlands
1,925 lbs, $260, Norway
374,280 lbs, $115,615, England
PAINT—615 gls, $367, Cuba
PARAFFINE—3,150 gls, $382, England
PEPPERMINT—1,000 lbs, $1,321, England
900 lbs, $1,200, England
284 lbs, $709, China
191 lbs, $481, British South Africa
RED—$1,904, England
SEWING MACHINE—190 gls, $208, Cuba
50 gls, $50, Argentine
55 gls, $73, Colombia
368 gls, $368, Ecuador
48 gls, $48, Azores
300 gls, $300, England
55 gls, $46, British South Africa
OLEO STOCK—132,235 lbs, $55,725, Netherlands
OPIUM—$117, Cuba—$137, Brazil
PAINT, READY MIXED—156 gls, $210, Honduras
691 gls, $1,074, Panama
632 gls, $890, Salvador
530 gls, $630, Mexico
200 gls, $237, Newfoundland
2,457 gls, $2,135, Cuba
2,775 gls, $7,632, Argentine
190 gls, $246, Colombia
350 gls, $413, Peru
240 gls, $620, Uruguay
1,000 gls, $1,213, British South Africa
18 gls, $50, Portugese Africa
25 gls, $18, Costa Rica
1,071 gls, $1,679, Panama
6,944 gls, $9,533, Cuba
1,840 gls, $4,432, Argentine
156 gls, $363, Brazil
404 gls, $491, Guatemala
102 gls, $132, Honduras
165 gls, $211, Ecuador
160 gls, $200, Venezuela
84 gls, $245, Australia
427 gls, $1,160, Philippine Islands
105 gls, $261, Honduras
767 gls, $1,425, British West Indies
826 gls, $1,674, British South Africa
ALL OTHER—$7,527, Spain—$76, Guatemala
$987, Panama—$293, Salvador
$294, Mexico—$1,209, Cuba
$186, Hayti—$560, Argentine
$1,865, Chile—$779, Colombia
$1,444, Ecuador—$1,262, British South Africa
$3,072, Norway—$1,365, Sweden
$303, Costa Rica—$6,387, Cuba
$422, French West Indies—$1,228, Argentine
$447, Ecuador—$1,742, Peru
$134, Panama—$758, Venezuela
$644, Philippine Islands—$967, British South Africa
$583, Panama—$269, Salvador
$212, British West Indies—$986, Cuba
$3,069, Chile—$720, British South Africa
PARIS GREEN—$770, Canary Islands
PETROLEUM JELLY—$4,655, Russia in Europe
$376, Scotland—$185, Cuba
$150, Brazil—$340, Dutch West Indies
$696, Chile—$111, Hong Kong
$115, Australia—$1,277, British South Africa
$1,488, England—$1,277, British South Africa
$71, Portuguese Africa
$3,717, Russia in Europe
$860, Chile—$1,281, British India
POTASH, BICHROMATE—2,444 lbs, $1,252, Norway
22,500 lbs, $13,050, Sweden
730 lbs, $277, Portugal
220 lbs, $155, Chile
CHLORATE—224,000 lbs, $122,472, Russia in Europe
3,760 lbs, $1,650, Cuba
760 lbs, $346, Bermuda
44,800 lbs, $20,608, Chile
33,600 lbs, $16,000, Russia in Europe
1,120 lbs, $550, Brazil
1,795 lbs, $1,266, Chile
CHLORIDE—500 lbs, $128, Panama
690 lbs, $273, England
PERMANGANATE—230 lbs, $365, San Domingo
5,480 lbs, $3,768, Russia in Europe
QUEBRACHO EXTRACT—117,462 lbs, $10,004, Japan
QUICKSILVER—150 lbs, $292, Peru
375 lbs, $600, Netherlands
QUININE—$1,750, Portugal—$1,413, Brazil
RED LEAD—$215, Cuba—$658, Argentine
$7,489, Russia in Europe—$470, Cuba
ROSIN—1,750 bbls, $10,500, England
40 bbls, $252, Honduras
100 bbls, $787, Colombia
92 bbls, $665, Peru
922 bbls, $5,000, Scotland
1,400 bbls, $12,000, Argentine
1,566 bbls, $10,674, Brazil
18 bbls, $88, Chile
183 bbls, $1,200, Australia
SALOL—1,000 lbs, $4,063, Italy
60 lbs, $302, Nicaragua
144 lbs, $1,000, Chile
SALTPETER—2,350 lbs, $561, Philippine Is
2,212 lbs, $553, Argentine
SILICA—$3,087, Italy—$224, France
$235, Panama
SOAP, TOILET AND FANCY—$5,554, France—$403, England
$370, Guatemala—$669, Honduras
$1,122, Panama—$1,114, Mexico
$137, Jamaica—$2,549, Cuba
$890, Hayti—$5,405, Argentine
$2,001, Chile—$647, Colombia
$275, Ecuador—$523, Peru
$301, Br So Africa—$439, Portuguese Africa
$185, Norway—$287, Spain
$844, Sweden—$157, Costa Rica
$312, Panama—$241, Jamaica
$2,721, Cuba—$3,380, Argentine
$1,910, Brazil—$780, Peru
$179, Venezuela—$139, China
$3,715, Straits Settlements—$645, Hong Kong
$1,718, Br So Africa—$192, Br East Africa
$236, Portuguese Africa—$803, Panama
$263, Honduras—$476, Cuba
$157, Canary Is
ALL OTHER—8,100 lbs, $306, Spain
5,155 lbs, $262, Honduras
39,740 lbs, $1,558, Panama
22,755 lbs, $1,422, Mexico
7,500 lbs, $343, Newfoundland
10,490 lbs, $559, Cuba
240,596 lbs, $13,428, Hayti
99,960 lbs, $608, Peru
16,985 lbs, $1,004, Cuba
7,950 lbs, $607, Uruguay
1,500 lbs, $1,988, Trinidad
1,200 lbs, $1,814, Br Guiana
270 lbs, $337, Cuba
2,115 lbs, $159, Guatemala
232,500 lbs, $9,063, Mexico
2,090 lbs, $341, Cuba
22,017 lbs, $1,357, Chile
28,060 lbs, $1,321, Panama
9,020 lbs, $406, Br West Indies
50,550 lbs, $2,864, Cuba
8,050 lbs, $490, San Domingo
30,420 lbs, $1,466, Br So Africa
SODA ASH—8,575 lbs, $277, Norway
132,500 lbs, $3,453, Sweden
566,250 lbs, $13,457, Cuba
10,080 lbs, $91, Argentine
17,540 gls, $606, Brazil
679,163 lbs, $29,655, Sweden
16,510 lbs, $459, Panama
6,245 lbs, $175, Brazil
16,705 lbs, $688, Peru
200,000 lbs, $2,178, Cuba
309,300 lbs, $11,316, Italy
BICARBONATE—1,141,500 lbs, $28,517, Italy
46,000 lbs, $630, Cuba
5,210 lbs, $170, Brazil
1,250 lbs, $53, Chile
2,530 lbs, $61, Venezuela
11,050 lbs, $1,715, Straits Settlements
7,000 lbs, $870, Philippine Islands
13,405 lbs, $401, Trinidad
3,335 lbs, $135, Chile
Correction:—The two shipments of 167,000 lbs, valued $5,000, and 236,400 lbs, valued $7,000, to Italy, which appeared in the last issue under the heading of Soda, Bicarbonate, were Soda, Sal. and the item of 12,452 lbs, valued at $965, was Soda, Bichromate.
BICHROMATE—11,200 lbs, $882, France
12,455 lbs, $965, Netherlands
2,360 lbs, $539, Portugal
22,400 lbs, $5,782, England
5,025 lbs, $1,361, Portugal
CAUSTIC—225,520 lbs, $9,020, France
1,482,952 lbs, $55,031, Italy
2,615 lbs, $113, Norway
111,720 lbs, $3,779, England
29,505 lbs, $1,653, Cuba
178,520 lbs, $8,957, Argentine
120,300 lbs, $372, Brazil
43,510 lbs, $1,443, Peru
1,518,235 lbs, $42,085, France
4,380 lbs, $530, Sweden
9,245 lbs, $362, Nicaragua
99,280 lbs, $5,624, Mexico
20,680 lbs, $817, Brazil
72,555 lbs, $4,609, British India
161,265 lbs, $4,519, Dutch East Indies
199,537 lbs, $10,002, Italy
68,850 lbs, $2,340, England
60,187 lbs, $3,060, Cuba
2,860 lbs, $735, British India
254,300 lbs, $12,722, British South Africa
246,838 lbs, $12,625, France
94,260 lbs, $6,063, Italy
53,440 lbs, $2,980, Norway
56,980 lbs, $2,328, Mexico
14,760 lbs, $590, Trinidad
22,265 lbs, $850, Cuba
4,050 lbs, $131, San Domingo
12,850 lbs, $1,071, Chile
321,573 lbs, $12,634, British India
CYANIDE—69,900 lbs, $19,779, Mexico
HYPOSULPHITE—22,500 lbs, $416, Sweden
16,140 lbs, $701, Straits Settlement
6,525 lbs, $331, Dutch East Indies
6,750 lbs, $151, Chile
SAL—236,100 lbs, $7,009, Italy
167,000 lbs, $5,000, Italy
2,250 lbs, $32, Brazil
3,075 lbs, $52, Jamaica
8,250 lbs, $193, Cuba
4,920 lbs, $72, Panama
SALICYLATE—105 lbs, $320, Nicaragua
130 lbs, $218, Cuba
125 lbs, $313, Brazil
165 lbs, $413, Chile
SILICATE—18,378 lbs, $202, Cuba
1,825 lbs, $85, Honduras
100,200 lbs, $4,200, Italy
1,837 lbs, $236, San Domingo
6,120 lbs, $262, Dutch Guiana
SULPHIDE—7,220 lbs, $213, Uruguay
1,470 lbs, $65, Chile
SULPHITE—3,718 lbs, $100, Portugal
SPELTER—383 tons, $126,969, France
111 tons, $22,765, Italy
1 ton, $335, Canada
498 tons, $148,374, France
SPONGES—968 lbs, $1,745, Argentine
STARCH—110,000 lbs, $2,470, Denmark
5,600 lbs, $157, Italy
17,500 lbs, $710, Panama
15,000 lbs, $450, Newfoundland
3,520 lbs, $259, Chile
2,800 lbs, $161, Azores
73,700 lbs, $2,472, France
18,375 lbs, $900, Sweden
382,100 lbs, $11,808, Scotland
9,920 lbs, $431, British South Africa
9,000 lbs, $400, Peru
STEARINE, ANIMAL—111,955 lbs, $17,913, Denmark
16,335 lbs, $2,102, Honduras
19,225 lbs, $2,488, Colombia
100,820 lbs, $15,137, France
15,360 lbs, $1,770, Norway
22,000 lbs, $2,530, Cuba
2,200 lbs, $295, Costa Rica
1,265 lbs, $142, Cuba
SULPHUR—10 tons, $600, Norway
17 tons, $598, Russia in Europe
10 tons, $338, Trinidad
TALC—44,800 lbs, $258, Cuba
3,300 lbs, $45, Brazil
TALLOW—1,600 lbs, $143, Honduras
76,160 lbs, $8,773, France
6,000 lbs, $832, Peru
37,335 lbs, $4,800, Peru
5,000 lbs, $644, San Domingo
TANNING EXTRACT—$867, England
$2,100, Sweden—$218, Straits Settlements
22,480 lbs, $2,248, Italy
$336, British India—$2,402, Chile
$173,950, Russia in Europe
TRINITROTOLUOL—67,000 lbs, $55,290, Russia in Europe
240,000 lbs, $240,000, France
270,475 lbs, $295,000, Italy
TURPENTINE, SPIRITS OF—260 gls, $121, Panama
185 gls, $101, Hayti
750 gls, $400, Brazil
50 gls, $36, Chile
245 gls, $141, Colombia
100 gls, $61, Ecuador
425 gls, $224, Peru
50 gls, $25, Portuguese Africa

(Continued on page 106.)

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CHEMICAL MARKET

Unless otherwise specified, our prices are those prevailing in the New York Market, and are for large quantities. Complete prices current will be found on pages 115, 116 and 117, and table of contents on page 11.

Saturday Noon, Sept. 30, 1916.

The market for future shipments of soda ash—that is, deliveries over 1917—has developed into an acute stage. Makers have booked up a greater part of their output and are not in a favorable position to accept new business. They are endeavoring to take care of old customers, and until these interests are covered new buyers may experience difficulty in contracting for shipments over next year. Caustic soda seems to be following closely in the wake of soda ash. Contract prices for next year are higher, with producers not in a favorable position to book new business. Bicarbonate of soda and carbonate of soda are both firm, but prices are unchanged. The scarcity of phosphoric acid is keeping the spot market rather nominal. Tartaric acid crystals are firm on spot, with offerings relatively light. Favorable prices are reported on contract for sulphuric acid. White granular sal ammoniac, high test, is in very limited local supply and the market is firmer. Commercial white arsenic is easier under the continued inactivity on the part of new buyers. Carbonate of copper is offered at 22c. minimum on spot, against a former price of 34c. per pound. Calcined carbonate of potash, 80@85 per cent., is easier on spot. Carbonate of zinc is lower, with sellers at 24c. per pound, against a previous selling price of 26c. Refined saltpeter has continued to advance under the pronounced strength of muriate of potash. The chlorates are holding steady on spot. Caustic potash, high test, is offered in a small way, but no large quantities are obtainable. Tin oxide has been advanced one cent per pound to 44c. minimum. Acetate of lime has been reduced 1½c. per pound by producers. Below is a detailed market report of the principal items of chemical interest, also a summary of the London, Liverpool and Philadelphia chemical

HEAVY CHEMICALS.

BICARBONATE OF SODA.—The interval has occasioned no material change in conditions governing this market. The strong position of other sodas is reflected in this variety and demand is reported satisfactory for prompt and forward shipments. Producers quote the market for car lots, prompt shipment, at 1.65c. in barrels and 1.75c. in kegs. A premium of 1-5c. is exacted by producers for deliveries in this territory, less the usual discount terms. The contract price for 1917 shipment is held at 1.50c.

BLEACHING POWDER.—Spot offerings in large drum containers have been reported at 4¼@4½c. per pound. Second hands are in control of the spot market at the present time. There continues to be a limited supply of bleach in small export drums and goods packed in these packages are bringing around 6c. per pound.

CAUSTIC SODA.—While it has been possible to shade the 4c. level for 76 per cent. flat, leading sellers generally have asked that figure during the interval. Demand is described as active and confidence is expressed in the future course of prices. Shipments over 1917 are heavily sold ahead and offerings are becoming scarce. Contracts for next year have been placed at 2¾@2½c. per pound, basis 60 per cent., f. o. b. works, and it is stated very little business can be booked at these figures.

SAL SODA.—Business for prompt and forward is being placed at 1c. per pound, f. o. b. works. The tone of the market is steady, with consuming demand reported normal. Resale spot lots have been sold at 1¼c. per pound.

SODA ASH.—Leading producers have sold contracts so heavily over 1917 that they are unable to accept new business. Under such conditions, the 1917 contract price is entirely nominal, at 1⅝c. for light, and 1¾c. for dense, basis 48 per cent., f. o. b. works. Sales of light 58 per cent. on spot have been reported at 3⅛@3¼c. per pound flat. Dense is in limted local supply and is quoted at 3½c. flat on spot.

ACIDS.

ACETIC.—The different varieties of this acid have been subjected to little important change during the week. Buyers are taking on seasonable requirements and dealers report export inquries for the high tests. Spot 28 per cent. is quoted 4⅛@4¼c. per pound. The 56 per cent. closed at 11c. asked per pound, with the glacial 99 per cent. at 27@28c.

MURIATIC.—This market is holding steady at lately prevailing quotations. The textile and color industries are showing seasonable interest and sales are embracing satisfactory proportions. The 18-degree grade closed at 1¾c. per pound; 20 degrees, 2c., and 22 degrees, 2¼@2¾c., according to seller and quantity. On large contracts these prices might be shaded.

NITRIC.—While sellers are in a position to shade ½c. a pound on long-time contracts, there is no unusual variation in the course of spot prices. Sellers quote 42 degrees at 7c. per pound for spot in carboys. Aqua fortis is quoted at ¼c. a pound under pure nitric acid.

OXALIC.—Sales at 60c. per pound in barrels have been reported on spot. It was intimated that 59c. might be worked on a firm offer in one or two quarters, but in others the feeling was stronger, with some dealers asking 61@62c. per pound. Spot offerings generally are small, but sufficient to meet current inquiries.

SULPHURIC.—Contracts of 66 degrees in tanks have been offered at $22 per ton, and it is understood that the price might be shaded on a firm offer for a long-time contract. Spot prices have remained about steady for all the different varieties. Offerings of 66 degrees at 1½c. per pound on spot have been reported. Buyers can still obtain 60 degrees around 1c. per pound for prompt shipment. Oleum is held at 2¼c. per pound.

Our Baltimore correspondent writes:—

The developments of the last week in the sulphuric acid market at Baltimore have not been of a striking nature, but the inquiry is reported to keep up, with the quotations about where they have been. The spurt in 60-degree acid seems to have abated somwhat, and the quotations, which had gone up to about $14 per ton, have eased off again to $12, where they now stand, manifesting much firmness. The figures for 50-degree acid are still at $10, while 66-degree acid is held at $20. According to report no big orders for acid have been actually taken during the week, but this is of no significance, contracts being placed to cover a long period of time, so that new business is not developed every day.

TARTARIC.—Makers' prices are unchanged on contracts, but spot offerings have been less prominent, and second hands report sales of crystals as high as 68c. per pound. Makers quote contract shipments at 65c. for powdered and 66c. a pound for crystals. Cream of tartar is holding steady at 40c. per pound.

MISCELLANEOUS CHEMICALS.

ACETATE OF LIME.—Makers have reduced prices for contracts to 3.50@3.55c. per pound, according to quantity. The new prices will be effective today.

ALUM.—Former prices are being named by sellers for the different varieties of this chemical. Small additional lots are prompting the most attention at the moment. Chrome alum is held at 25@30c. Dealers quote 4@4¼c. for ammonia and 6@6¼c. for potash alum. Sulphate of alumina ranges from 3¼c. to 5¾c. a pound, according to grade.

ARSENIC.—The tone of this market is a trifle easier, owing to the continued absence of new buying interest. Prompt or immediate shipments in car lots are quoted at 5¾c. per pound, and smaller quantities at 6c. per pound. Red arsenic is very scarce and firmly held in the neighborhood of 65c. per pound on spot.

BLUE VITROL.—Spot offerings of small crystals have been made at 8½c. per pound, while prime large crystals are quoted at 10@10¼c. per pound, according to quantity. The tone of the general market is quite steady, with grade, quantity and brand the main factors in shaping prices.

BRIMSTONE.—The strong position of this market has not been altered during the past week. Demand from the consuming trade is active and shipping rates are high. Spot is held at $35 a long ton and shipments $30 a long ton. Baltimore shipments are held at $30.50 a long ton.

CARBONATE OF POTASH.—Resale lots of the low-test calcined have been offered at reduced prices. The other varieties remain about steady. Dealers quote calcined, 80@85 per cent., 50c. per pound; 96@98 per cent., 65c., and hydrated, 80@85 per cent., 80c. per pound.

CAUSTIC POTASH.—Dealers report moderate quantities of 88@90 per cent. test available at 85@90c. per pound on spot. The 70@75 per cent. test is quoted at 60c. per pound. Small-lot trading necessarily predominates on account of the scarcity of offerings.

CHLORATE OF POTASH.—Jobbers report sales at prices ranging from 48@50c. per pound on spot. Producers quote 70c. per pound. A fair inquiry is reported for home and export requirements.

CHLORATE OF SODA.—The spot market is holding steady at 28@32c. per pound. Makers quote on the basis of 35c. per pound for prompt shipment.

CHLORIDE OF BARIUM.—Spot in car lots is quoted at 5c. per pound, and at 5¼@5½c. per pound for smaller quantities, according to size. The tanneries are showing interest in both prompt and future deliveries.

GLAUBER'S SALT.—Leading sellers quote 60@65c. per hundred pounds for this item in barrels. The market is described as steady at these figures.

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white granular were made early in the week at 10c. per pound. Spot offerings are scarce and at the close the market was firmer. Gray is quoted at 10@15c. a pound; white, 10½c., according to quality, and lump at 18@20c. per pound nominal.

SALTPETER.—Higher prices for muriate of potash have been reflected in the course of refined saltpeter prices and at the close the market was firmer, with spot quoted at 28@30c. per pound.

SUGAR OF LEAD.—Sellers' views are unchanged for the different varieties of this chemical. Demand is reported fair, with consumers showing an inclination to cover nearby wants. Sellers quote white crystals at 13½c. per pound in casks, 13¾c. in barrels and 14c. in kegs. The white powdered grade is 14⅞c. for casks or barrels and 15¾c. per pound in kegs. White sugar of lead broken in barrels or casks is 12¾c. per pound, while granular in casks or barrels is 13¼c. per pound, and brown sugar of lead is held at 11¾c. per pound in barrels or cask.s

LONDON CHEMICAL MARKET.

London, September 20, 1916.

Business generally continues quiet. Citric acid is easier on the week, but tartaric acid has firmed up, while quotations for English acid have come openly on the scene. Cream of tartar is unchanged. Arsenic is a harder market. Potashes are rather irregular, being quoted lower in Liverpool, and London spot holders have given way a little. Copper sulphate has advanced £1 per ton. Chinese crude and regulus antimony have advanced.

The following shows current rates quoted here for spot goods unless otherwise indicated:—

Acid, carbolic, per gal., 60 per cent., crude, East and West Coast, 3s. 4d. ex works; 50-40 degrees, crystals, per lb., 1s. 3d.

Acid, citric, per lb., 2s. 10d.

Acid tartaric, per lb., foreign, 2s. 10d.; crystals, 2s. 8d. powder; English, 2s. 11d. crystals.

Acid, oxalic, per lb., 1s. 7d., free delivered London.

Acid, boracic, per cwt., crystals, 55s.; powder, 57s.

Alum, per ton, lump, £23@£25, nominal, ex wharf London.

Ammonia sulphate, gray, of 25 per cent., London, £16 17s. 6d.; Leith, £18; Hull, £17 12s. 6d.; Liverpool, £18.

Arsenic, Cornish, powdered white, per ton, £36@37.

Ashes, per cwt., Montreal, firsts, government certificated, 160s.

Benzole, per gal., 90 per cent., 1s. ½d.@1s. 1d., London.

Bleaching powder, per ton, £24@£25.

Borax, per cwt., crystals, 53s.; powder, 34s.

Cream of tartar, per cwt., 98 per cent., foreign powder, 187s. 6d.

Lead, English red, per ton, £41 5s., less 2½ per cent.; English white, £44 5s., including casks.

Potash, caustic, per ton, 80-82 per cent., £300.

Potassium bichromate, per lb., makers not openly quoting; dealers, 1s. 8d.

Potassium prussiate, per lb., dealers, 3s. 11d.; soda, 2s. 6d.

Potassium chlorate, per lb., 2s. 6d.; soda, 1s. 4d.

Potassium permanganate, 6s. 6d. per lb.

Potassium carbonate, per ton, 90-92 per cent., £150; 80-85 per cent., £120.

Quicksilver, per bottle, Spanish, £17 12s. 6d. @£17 15s.

Soda bicarbonate, per ton, London, casks, £7.

Soda nitrate, per ton, refined, £18 10s.; agricultural, £18 5s.

Sulphur, per ton, roll, £15; flower, £15 ex wharf net.

Sulphate of copper, per ton, Liverpool, £50.

Sulphate of iron, per ton, 160s., nominal.

Antimony, regulus, per ton, nominal, British smelters' spot price £95 to consumers for munitions purposes only. Chinese regulus spot, £65; prompt shipment, £50@£55, c. i. f. China crude, spot, £50; sold Sept.-Oct., £31, c. i. f.

LIVERPOOL CHEMICAL MARKET.

Liverpool, September 20, 1916.

With limited supplies, together with the stringent shipping restrictions, there is not much fresh business going on in the heavy lines of chemicals.

The exports of bleaching powder and sodas for the month of August, mostly show a decrease as compared with August, 1915, particularly as regards bleach, being only 686 tons, as against 2,292 tons in August of last year.

Ammonia ash very scarce, manufacturers being fully sold on contract, while there is little to be had from second hands.

Soda crystals are sparingly offered at £3 13s. @£3 15s. per ton net cash for barrels, and 7s. less for bags.

Caustic Soda.—There are no sellers of the English product at the moment.

Bleaching powder still in limited supply and prices are a matter of special negotiation.

Sulphate of ammonia is very steady at £18 7s. 6d. per ton less 2½ per cent. for good grey 24-25 per cent. in double bags, f. o. b. here, prompt delivery, and a premium asked for forward months. Supplies are on a very moderate scale for export, a large proportion of the make being reserved for home requirements.

Nitrate of soda firm on about the basis of £17 5s. per ton net cash for ordinary quality, and £17 15s. per ton for refined, in double bags, f. o. b. here.

Sulphate of copper is not offered for prompt delivery, while for October forward, business is reported at £50 per ton less 5 per cent for casks, and in some cases a premium of 10s. per ton over that figure is now quoted.

Shipments for the month of August were 1,772 tons, as against 1,424 in the corresponding month of last year, which is satisfactory.

PHILADELPHIA CHEMICAL MARKET.

Philadelphia, Sept. 28, 1916.

SODA ASH.—Continues in good demand, with holders firm in their views for what is available, not only for spot or nearby, but also for futures, and some of the producers well sold up over the balance of this year and all of next. Light 58 per cent. on spot or nearby, in carload lots, is held at 3.25@3.50c. per

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pound flat. Shipments over next year are quoted at 1.80@3c. for the light 58 per cent. f. a. b. works.

CAUSTIC SODA.—Spot demand has been less active than previously noted, but stocks are very limited, with holders firm, and any little demand will probably mean sharp advances in figures. High tests are held at 3.75@4.15c. for carload lots and jobbing parcels, with no disposition to sell. Makers are heavily sold ahead and contracts for next year have been placed at 2.25@2.50c., basis of 60 per cent. f. o. b. works for high test.

SAL SODA.—One cent per pound continues the ruling figure for balance of this year and some little inquiry is noted. For next year, however, some makers want a decided advance in figures and name 1.12½@1.20c., although it is reported that some contracts have been made at considerably below these figures.

BLEACHING POWDER.—Has shown no special activity since last report, and spot and nearby parcels are quoted at 4.50@5c. per pound, as to brand, packages and position. Contracts over next year continue held at 2.50c. and upwards.

NITRATE OF SODA.—Recent arrivals have all been delivered on contracts, and most consumers well supplied and taking little interest at the moment. Nearby arrivals can be had at 2.95@3c. for the 95 per cent. test and same figures are named for arrivals over the balance of this year and the first half of next year, with the usual advance for the 96 per cent. goods.

Fire and Accident Prevention Day
October 9.

The National Fire Protection Association and the National Safety Council, the leading American organizations striving to eliminate common fire and accident hazards from the United States and Canada, are uniting this year in urging the nation-wide observance of "Fire and Accident Prevention Day" on October 9, the anniversary of the great Chicago fire. An attractive poster has been designed and suggested programs for observance of the day worked out which are being distributed to the civic and commercial organizations of the country. The national and Dominion associations of fire chiefs, fire marshals and credit men are co-operating.

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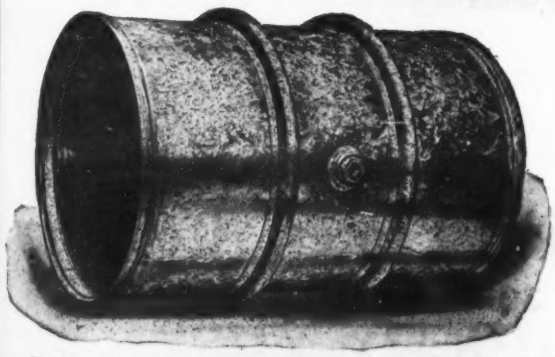

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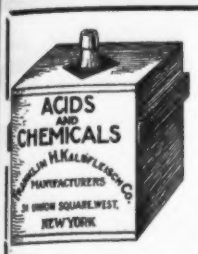

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Unless otherwise specified, our prices are those prevailing in the New York Market, and are for large quantities. Complete prices current will be found on pages 115, 116 and 117, and table of contents on page 11.

Saturday Noon, Sept. 30, 1916.

There has not been much change in the general fertilizer situation during the week. Demand is reported to be of fair volume, and there is a good movement of mixtures, especially in the South. The materials market has received some attention, owing to fluctuations in prices. Potash salts have been in the foreground, owing to reports that a valuable deposit has been found in Cuba. Reference was made to this in our issue of last week, as glowing accounts were circulated to the effect that these deposits were highly valuable and would become important as a market factor. We have cable advices this week stating that the earlier reports were not well founded and later investigations will be awaited with interest. The price of muriate of potash in the local market has been strong through the period. Nitrate of soda has been easy in tone and slight recessions have been given from the prices quoted a week ago. Fish scrap has been firmer and a ready market has been said to exist for all offerings. Sulphate of ammonia has been firm and offerings are limited. A report from Spain says that there is a scarcity there of artificial fertilizers and that a closer study has been made of materials which can be obtained in that country. It is stated that a material known as marine kainit has been obtained from sea water. This report also says that the potash deposits in Spain have not been important, as no serious attempt has been made to develop them. For reports of the Baltimore, Chicago and Atlanta fertilizer markets, refer to index on page 7. Detailed reports on the separate articles of the local market follow:

NITROGENOUS FERTILIZERS.

DRIED BLOOD AND TANKAGE.—There has been practically no change in the situation regarding these animal ammoniates. Advices from Chicago show that market is holding steady. The price is quoted at $3.20 per unit of ammonia for dried blood and $3.10 per unit for high-grade tankage. Some demand is said to exist for tankage independent of the fertilizer trade.

FISH SCRAP.—A strong situation exists in the market for fish scrap. This arises primarily from the fact that production this season has been comparatively small, and, in spite of the high prices which have been asked, sellers have been able to dispose of the bulk of their holdings so that there have been no accumulations at any time and consequently there has been no selling pressure. As the season advanced and sellers were able to dispose of their offerings, the tone of the market strengthened and present quotations are higher than those which were in effect a week ago. The quotations for dry fish scrap at Baltimore is given at $3.70 per unit.

NITRATE OF SODA.—Advices from Valparaiso say that, although sales have not been very many, a very fair interest has been noticeable and chiefly owing to the firm attitude taken by sellers the market can be considered as undoubtedly stronger. Sellers on the coast held off once rumors came through that the Antofagasta Company had placed a large cargo for October at a price far exceeding offers or indications at this end, and since it has been confirmed that this transaction is correct. For prompt several holders are anxious to sell, as long as they can replace for future, but the strong position taken by sellers for forward also makes business difficult for the moment.

Another important factor which has stiffened the market is the probability of German producers having to close down later on, owing to the restricted selling market now left open to them, as it is far from likely that they will continue to produce more than what they are likely to find a market for.

Domestic markets have been easy in the past few weeks and prices have been going in buyers' favor. Quotations heard this week range from $2.90 @2.95 per 100 lbs. for spot and future. Demand for this material is reported to be holding up well from the explosives trade and fertilizers manufacturers also have been in the market.

SULPHATE OF AMMONIA.—If anything, sulphate of ammonia is growing stronger, though no quotable change has been made in prices during the week. An analysis of the situation reveals that values are firm, due to the fact that supplies are small and demand appears to have surpassed supply. At any rate, domestic producers of sulphate are reported to be well sold up and are not able to offer large amounts in the spot market or for prompt shipment. There is a good delivery against contracts, and, as many consumers are covered ahead, this serves to reduce demand in the present market. The price is quoted at $4 per 100 pounds for spot and shipment.

PHOSPHATES.

ACID PHOSPHATE.—Some demand for acid phosphate is reported for forward positions. Prices on the latter are almost on the parity with the spot quotations, which are $11 for 16 per cent. and $10.50 for 12 per cent. There is a moderate demand for spot material, with no special features to present trading. Stocks are not large and this helps to keep values on a steady basis.

PHOSPHATE ROCK.—There is a similarity to reports regarding market conditions for phosphate rock and nothing new has developed during the week. Domestic consumers are taking delivery against old contracts, but new business is not active and the handicap which is imposed by export conditions is still a factor in restricting the movement of all grades of rock. Prices are holding steady, and are quoted at:—Florida land pebble, $1.75@3.25, f. o. b. Port Tampa; South Carolina kiln dried, $3.50@3.75, f. o. b. Ashley River; Florida high-grade rock, 77 per cent., $5@6.25, f. o. b. Florida ports; Tennessee rock, 70 to 80 per cent., $6@6.50, f. o. b. Mount Pleasant; 15 per cent., granulated, $4@5, and 68 to 72 per cent., $4.25@4.50.

POTASH SALTS.

Considerable inquiry has been heard this week regarding the prospects of obtaining potash from Cuba. Last week there were reports that extensive deposits had been found in that country, and this led to the belief that there would be increase in offerings in all markets. Later advices from Cuba have stated that the earlier reports were not well founded, and it is now a question as to whether potash actually exists there, and, if so, whether the deposits will show a good analysis. Muriate of potash has been very firm during the week and in most quarters $400 per ton has been quoted as the inside price, with some holders asking $420 per ton.

ATLANTA.

Atlanta Ga., Sept. 28, 1916.

The fertilizer trade is feeling good over the prospect of one of the biggest and best seasons it has ever known. This is particularly true in the Georgia territory, where a fairly good cotton crop has been made at unusually high prices. The farmers are feeling good and the prospect is for a large increase in next year's acreage, with a consequent increased consumption of bag goods. Manufacturers and some mixers have purchased freely and largely of bulk acid, nitrate of soda and tankage. Large quantities of 6½ and 30 tankage have been sold. There has been comparatively little trading in meal in the interior, on account of the high price, although some has been sold at the coast. There is also the usual trading in meal in the country, but the manufacturers have been looking to other materials. Quotations are now strong on practically all products. The small supply of Nebraska potash has been exhausted. Current quotations for round lots are as follows:—

Cottonseed meal, 7 per cent., new crop, $31.50 Atlanta.

Blood, $3.60; tankage, $3.60 and 10, Atlanta, for October shipment; 6½ and 30 tankage, $72 per ton.

Fish guano offered at $3.95 and 10, delivered, Atlanta.

Sulphate of ammonia, domestic, $3.90, for delivery Atlanta before Jnauary 1.

Nitrate of soda, $2.95, ex-vessel, South Atlantic ports.

Cyanimid, $2.72 per unit of ammonia, for October shipment, plus bags at current prices; for later months an advance of 2½c. per unit.

Acid phosphate, $11.50, interior; $11, coast points.

Potash salts, Nebraska potash, made by Potash Products Company, guaranteed 26 per cent., available, quoted $5 per unit, practically all sold.

Phosphate rock, $1.75 Florida mines.

Pyrites, 16c. per unit of sulphur at the ports.

CHICAGO.

Chicago, Ill., September 28, 1916.

The market in Western ammoniates has been quiet since the last report and prices have held firm. "Watchful waiting" might be said to be the slogan of both the buyers and the sellers. It is true that the rapid rise in prices of both blood and tankage may be said to be artificial, but, on the other hand, there has been steady trading in ammoniates and stocks are not very heavy. The next few months will tell whether prices will recede, as buyers so confidently expect, or whether they will advance still higher, as they now show indications of doing. The last week did not witness any large sales of either blood or tankage, but small quantities were sold. It is doubted if 300 tons of high grade tankage could be bought in this market for prompt delivery. Futures are being offered, but at prices that are considered prohibitive. The fertilizer manufacturers are going about the purchase of their other materials and are neglecting animal ammoniates, which they will purchase at the eleventh hour and pay exorbitantly high prices, as they have done year in and year out. They are purchasing garbage tankage, hair tankage, low grade tankage, etc., but no high grade animal ammoniates.

There is a rumor in this market of a considerable quantity of South American tankage which will be imported by a New York concern. It is not expected that this will have much of a tendency to break the Chicago market. The visible supply of ammoniates produced by small packers and renderers is daily becoming smaller. Unlike other seasons, the renderer this season can dispose of his tankage to at least four or

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HIGH GRADE GROUND TANKAGE.—Sales have been made at $3.10 per unit of ammonia and 1c. per unit B. P. L., basis f. o. b. Chicago, and most manufacturers are now inclined to boost the price 5c. per unit. The fertilizer manufacturers claim that something must break because, at the present price of ammoniates, they cannot make money on the nitrogen content in their mixtures. They must either find a lower priced ammoniate (which at the present time seems impossible), or they must raise the price on mixed goods. The latter course will probably be pursued and the gradual turning of the former from mixed goods to acid phosphate will continue the coming season and will probably be much greater.

HIGH GRADE GROUND BLOOD.—There has been a little activity in blood at $3.25 per unit of ammonia f. o. b. Chicago. Crushed blood for feeding tankage sold for $3.15 per unit of ammonia f. o. b. Chicago.

STEAMED BONE.—This market is experiencing the end of an active inquiry for steamed bone. The planting season is now on and the manufacturers are shipping bone as fast as they can get it in. Ground 3 and 50 bone is quoted at $24@25 in bulk f. o. b. Chicago. Unground steamed bone of any analysis, $22 a tone f. o. b. Chicago.

CONCENTRATED TANKAGE.—Manufacturers have decided that it is about time for the prices to stiffen on this commodity and ground concentrated is quoted at $2.90 per unit of ammonia f. o. b. Chicago, and unground at $2.60 f. o. b. Chicago.

GARBAGE TANKAGE.—Vast quantities of this commodity have been sold and the price has been gradually raised to $6.00 per ton, basis f. o. b. Chicago. There is considerably less of this commodity to be had than was offered a week or so ago.

HORNS AND HOOFS.—Demand is not strong and offerings are small, with prices about the same. Cows, bulls, culls and small range from $60 to $70 a ton f. o. b. Chicago; No. 1 steer horns, $125@130 a ton f. o. b. Chicago; No. 2 steer horns, $70@75; No. 3 steer horns, $40@45; ordinary packer stock hoofs, $27.50@32.50 a ton, with straight carload lots of packer production $32.50 a ton and small country lots $21@25, as to condition and quality.

GLUE STOCK.—Demand is good and sales are fair, but prices remain about the same. Packers' scrap hide trimmings, $16@17.50 a ton f. o. b. Chicago; green salted pates, shanks and hide trimmings, $19@21 a ton; packers' sinews, $23@27.50, with 5 per cent. for salt allowance; country sinews, $21.50 @22.50.

BONES.—A broad demand is absorbing offerings about as fast as they can be made, with prices holding steady to firm. Packers' jaws, skulls and knuckles, $32.50@33 a ton f. o. b. Chicago; packers' dry bones of good quality, $25@26.50 a ton, carload lots $2 more; ground raw bones, $27@28 a ton; junk bones in good demand, with prairies quoted at $25@26.50.

BALTIMORE.

Baltimore, Sept. 28, 1916.

The general situation in the fertilizer trade has undergone no decided changes during the last week. The shipping season continues to develop orders in considerable number, though the volume of business hardly comes up to expectations. The manufacturers of mixtures would be closer up with the inquiries, but for the shortage of labor in the early part of the season and the deficiency of cars at the present time. This shortage is productive of delays which retard the movement to a pronounced degree, and there is at present no prospect that a marked change for the better will take place shortly. Notwithstanding these drawbacks, however, the season is fairly satisfactory, and when all the returns come in it may be found to come up to most other seasons, even making allowance for the increase which should take place normally from year to year. The indications as to the future are of course favorable. With the agriculturists getting prices higher than those they have realized for a long time, they are in a position, even when the advanced cost of farm labor is considered, to buy fertilizers with much freedom. The outlook for the continuance of remunerative returns on foodstuffs and other things the farmer has for sale is very promising. As long as the war lasts this country will be called upon to take care of a large portion of the requirements of the warring nations, and the entrance into the conflict of countries that for a long time held aloof, in other words, the widening of the theatre of the war, will correspondingly augment the necessities of Europe, since it means the withdrawal of working forces that would otherwise be utilized to produce foodstuffs and the narrowing of the soil cultivated. With these conditions in mind, the farmers of the United States will feel moved to increase their acreage and enlarge their crops, which in turn will call for greater quantities of fertilizers and will furnish a wide market for the output of the factories here, furnishing a substantial reason for the advances that have taken place in some of the crude materials. The larger part of the crude list is very firm, with the tendency unmistakably upward and with a feeling of buoyancy in the trade. This buoyancy is naturally emphasized by the undoubted scarcity of some of the stocks. The holders, therefore, may be expected to adhere to their figures, remunerative as these already are.

FISH SCRAP.—The situation with regard to fish scrap is decidedly encouraging to the fish factories, which face a receptive market for all of the scrap they can turn out. The fishing has been fairly good, and though not extraordinary, is materially ahead of last year at this time, with the fleet still continuing regularly at work, and the weather generally favorable to operations down the bay and at other points. The quotations on scrap are held up by the relatively limited quantities of this ammoniate entering the market, and also by the high quotations on other animal ammoniates, which naturally tends to sustain the rest of the market. The prevailing figures are around $3.70 and 10, delivered at Baltimore, and the offerings are not urgent at that, the factories having found the returns sufficiently attractive all along to dispose of their product. What makes the results still more gratifying to the fish factories is the good price realized on oil, in which the fish this year are exceptionally rich.

TANKAGE.—Evidently the territory close to the large Western producers of tankage has proved quite responsive to the tenders of holders of late, for the sellers feel impelled to mark up their figures from time to time. The latest quotations are around $3.67½ and 10 for 11 and 15 high grade ground tankage c. a. f. basis Baltimore, and it does not seem that the top has yet been reached. The needs of the users of animal ammoniates are apparently undergoing a steady growth, while the statistics relative to live stock do not encourage expectations that the available supplies will correspondingly expand. All the information obtainable is in fact indicative of a falling behind in live stock production to the growth in population, which means a relative decrease. When, in addition, it is borne in mind that the prevailing high prices of agricultural products tend to encourage an expansion of the acreage for crops and a corresponding addition to the quantities of mixtures called for, the reason for the prevailing high price of tankage is supplied. Of course, the smaller producers near home are putting out lots at lower figures, but these supplies do not begin to meet the requirements of the trade, and the Western sellers are disposed to stand pat.

GROUND BLOOD.—Because of the less favorable position of the South relative to the returns on cotton and other products the quotations on blood, as the animal ammoniate especially in demand throughout that section have hardly kept pace with those of the other animal ammoniate. Even now they are somewhat under those on tankage, being around $3.57½ c. a. f. basis Baltimore. But the producers are not at all discouraged. The price realized is to be regarded as decidedly attractive, and there is the prospect that with the continuance of the upward movement in cotton, the outlook for fertilizers in the South will be correspondingly improved. The demand in that section is a dependability that blood may be put upon to produce exactly as respondingly improved. The demand in that higher than it is.

ACID PHOSPHATE.—The situation with respect to acid phosphate is quite as favorable as it has been of late, the inquiry being decidedly active, and the factories having no such accumulations as might encourage expectations of a pressure upon the market later on. As a matter of fact, all the information available is to the effect that the holdings are comparatively small, and that the prospect of a positive shortage later on, when the demands of the fertilizer factories become more urgent, is not at all unlikely. This possibility, or even probability, tends to make the market very firm, the quotations on spot being around $10.50 for 14 per cent. and $11 for 16 per cent. stocks, while those on future deliveries are $10 and $10.50, respectively. This seems to be a drop, but, as has been explained before, futures have been lower all along than spot, the prevailing figures being, in fact, higher than those marked up not long ago.

NITRATE OF SODA.—The quotations on nitrate of soda are at least nominally lower than they were several weeks ago, being now around $2.90 per 100 pounds. Apparently, a recession has taken place, but an analysis of the situation tends to leave the impression that the explanation for the seeming decline must be sought in another direction. While the precise causes for the changes in the nitrate of soda list are, as a rule, hard to divine, the prevailing view is that the recession should be attributed entirely to lower ocean freight rates, the value of stocks, apart from the decline in the rates, being virtually unchanged. Stocks do not appear to be excessive, and the outlook for a continuance of firmness in the market is very encouraging to the sellers.

SULPHATE OF AMMONIA.—Among the materials that are not only holding their own, but that have undergone a rather slow but steady advance, is sulphate of ammonia. This product is now quoted at $4, which represents a heavy increase over the low figures for the year, and appears all the more impressive when mention is made of the fact that foreign stocks are higher still, being, in fact, beyond the reach of the fertilizer men, so that imports receive no consideration from them. The British embargo on sulphate, which is needed at home, prevents shipments to the United States in considerable quantities, and, as the domestic production does not exceed a moderate production, there is every prospect that the prevailing prices will hold.

POTASH.—The lowering tendency with respect to potash which prevailed for a time has been succeeded by a movement upward, and the interest manifested by the manufacturers of fertilizer mixturts in potash has correspondingly diminished. This material is again beyond the reach of the fertilizer trade, and will probably not again receive serious attention until the figures are considerably lower than they now are.

BONE.—With other crude stocks up, it is not at all surprising that bone should also show much firmness, the quotations being unchanged at $32 for 4½ and 50 ground raw bone, and $28 for 3 and 50 ground steamed bone, the latter in bulk. The inquiry for bone is not urgent, but as far as can be learned the holdings have attained no such proportions as would cause pressure upon the market, and there is a prospect even of an advance.

To Establish Freight Rates on Caustic Soda.

Washington, Sept. 29, 1916.

The application made by the Southern Railway Company to establish rates on caustic soda (sodium hydroxide) in bulk in barrels or in tank cars, carloads from Canton, N. C., to Brunswick, and Savannan, Ga.; Charleston, S. C.; Jacksonville, Fla., without observing the long and short haul provision, has been denied by the Interstate Commerce Commission, as no justification for rates on that basis has been shown by the petitioners according to the commission's view.

British Patents Applied For.

Among the new patents which have been registered at the office of the Comptroller-General of Patents, London, England, are many which may be of interest to readers of the Reporter. Specifications are printed fifteen days after the advertisement of the acceptance of the complete specifications, which may take place at any time within twelve or fifteen months after date of application. Specifications are sold at the uniform price of 6d. Postage to foreign countries is usually ½d. per specification. The following patents were applied for September 4 to 9:—

Chlorates and perchlorates of alkalies. No. 12,567.
Barium sulphide and strontium sulphide from their sulphates. No. 12,763.
Ammonium nitrate. No. 12,532.
Acetic anhydride. No. 12,754.

Patents Granted.

Among latest issued patents are many which have a direct interest to readers of the Oil, Paint and Drug Reporter. Our space will not permit the publication of details of each patent, but we have compiled a list giving the name and the number of the patent, and those of our readers who wish to obtain details of any of them can secure a copy of the patent by addressing the Commissioner of Patents, Washington, D. C., and sending 5 cents for each patent desired:—

Caustic alkilies. No. 1,198,967.
Cellulose, electric treatment of. No. 1,198,867.
Hydrocarbons, unsaturated. No. 1,198,943.
Nitrogen by means of ferro-aluminum or other alloys, fixing. No. 1,198,965.

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INDUSTRIAL SECURITIES

tendency of the market has con- upward and active buying. De- has been stimulated by favora- ports of railroad and industrial gs and low money rates. In ial circles intense bullishness on teel and copper industry is re- , a reflection of which is found character of the buying of steel opper shares. Advices received the two industries perhaps were ost optimistic of any so far re- from actual trade centers, with indications of higher prices and ing business, especially in steel, for which are being actively by consumers for the first half , with no certainty that deliv- an be made until long after that . An encouraging feature of the usiness is found in its large pro- on for strictly domestic account. ome demand for distant deliv- rom consumers who are not buy- or war munition manufacturing es is exceedingly heavy, with a d increase in the inquiry from ds and from companies which out railway equipment. Exports ue very heavy, with the Rus- Government a heavy buyer of us commodities of late.

den & Co. report net available for dividends for seven months July 31 was $2,172,264, of which ,223 was from plant and $128,041 sale of investments. This is alent to $1.89 a share on 1,150,574 s of common stock outstanding, t rate of about $3.25 a year.

International Nickel Company's working capital as of March 31 $10,519,130, or in excess of par e of outstanding preferred stock. ssets applicable to common stock at time are stated as $27 a share. ectors of the Texas Company a 25 per cent. increase in capital , amounting to $11,500,000, to be d at par, $100, to stock of record mber 30. Payments to be made o installments of 50 per cent. each, January 5 and April 5, 1917. New will share in earnings from 1. Increase which stockholders vote on November 14 will bring al stock of company up to $55,- 0.

Procter & Gamble Company's is- f $7,500,000 serial 5 per cent. cou- notes has been purchased by F. S. ley & Co. and Old Colony Trust Present capital liability consists $14,037,384 common and $2,250,000 rred stock. Volume of business nths ended June 30 exceeded $88,- 0; net was above $6,000,000.

Du Pont Fabrikoid Co. has notice in Delaware of an increase in capital stock from $3,000,000 to $5,- 000,000.

The Fairmount Chemical Company will build a sulphuric and nitric acid plant having capacity of 10,000 tons sulphuric acid a year on Tygart Valley River.

Mexican Petroleum Export Co. has declared dividend of 2 per cent., amounting to $1 U. S. gold, payable September 30.

Pan-American Petroleum and Transport Co.—Application has been made to list $10,000,000 of preferred stock in N. Y. Stock Exchange.

Quotations of leading chemical companies will be found in the following table:—

	Bid.	Asked.
American Cyanamid	34	37
American Cyanamid, pfd.	58	62
By-Products Coke	160	165
Casein Company of America	38	43
Davison Chemical	46	49
Dow Chemical	250	260
Dow Chemical, pfd.	99	100
Electro Bleaching	200	300
Federal Chemical	75	85
Federal Chemical, pfd.	103	107
Freeport Texas Sulphur	700	825
*Grasselli Chemical	250	260
Harrison Bros.	125	140
Harrison Bros., pfd.	95	100
Hooker Electro Chemical	50	..
Hooker Electro Chemical, pfd.	80	..
Kentucky Solvay	220	230
Matheson Alkali	85	95
Matheson Alkali, pfd.	98	102
Merrimac Chemical	120	130
Michigan Limestone & Ch.	30	35
Michigan Limestone & Ch., pfd.	18	23
Mulford Co., H. K.	64	74
Mutual Chemical	150	..
Niagara Alkali, pfd.	95	105
Penn. Salt Mfg. Co.	98	100
Rollin Chemical	..	50
Rollin Chemical, pfd.	..	100
Semet Solvay Co.	315	325
Smith Chemical	..	250
Solvay Process	310	340
Standard Chemical	85	100
Union Sulphur	11,500	..
United Dyewood	100	..
United Dyewood, pfd.	99	..

*Ex. div., 5 per cent.

New Trade-Marks.

Details of the following new trade-marks which have been granted during the past week may be obtained on application to the Commissioner of Patents, Washington, D. C.:—

Chemical compounds. No. 112,641.
Chemical preparations. No. 112,633.
Chlorate of potash. No. 112,688.
Dextrine, etc. No. 112,682.
Disinfectants and insecticides. No. 112,367.
Insecticides. Nos. 112,694, 112,714, 112,660.
Paints, etc. No. 112,610.
Varnish. No. 112,632.

New Trade-Marks Applied For.

Dyes. No. 96,682.
Feed, cottonseed. No. 92,491.
Oil, peanut. No. 97,079.
Oil, vegetable. No. 97,058.
Paint. No. 95,900.

Aniline Dyes, Sulphur Black
Fur Dyes
Aniline Oil
Chemicals

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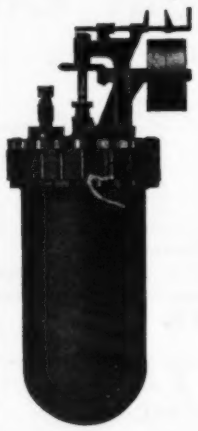

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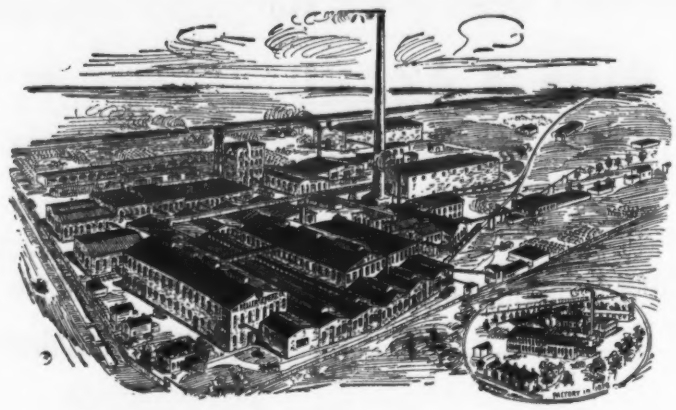

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DYE MARKET

Unless otherwise specified, our prices are those prevailing in the New York Market, and are for large quantities. Complete prices current will be found on pages 115, 116 and 117, and table of contents on page 3.

Saturday Noon, Sept. 30, 1916.

Interest in the domestic production of dyes has been increased by the exhibits of manufacturers this week at the Chemical Show. There is a good demand for various colors on spot, with different prices quoted in different quarters. Some of the materials are attracting attention because of uncertainty regarding future price movements. Aniline oil is one of the articles about which there is doubt concerning future values. Production is known to have declined and this should be sufficient to firm up prices, but such has not been the case so far. Bichromate of soda is another material which was expected to go up in price, but second-hand offerings are plentiful and depress the market. Prussiates have been easier lately, though all of the potash compounds seem fundamentally strong since muriate of potash has been advancing. A report has come from Sicily regarding the production of sumac there. This report says that two species of sumac are grown in Sicily, the wild and the cultivated. Local sellers quote sumac as $68 per ton. Myrabolanes are firm, with offerings limited both here and at primary points. Detailed reports on the separate items of the local market follow:

ACETATE OF SODA.—The market for this material is still easy, with very little change for the week. The inside price appears to be 10½c. per pound and there is considerable range, according to seller. In some quarters 11c. per pound will not be shaded.

ALBUMEN.—There is a steady tone to the market for egg albumen. Chinese hen egg albumen is quoted at 72@75c. per pound. Duck egg albumen is offered at 67c. per pound. Blood albumen is also firm, though a wide range is quoted, according to grade and seller. Prices quoted range from 28c@37c. per pound.

ANILINE OIL AND SALTS.—Contradictory reports are heard regarding aniline oil. With production smaller advances are freely predicted, yet the course of the market has been downwards, and many hold that the low point is yet to come. Spot offerings a short time ago were quoted up around 30c. per pound, but this price has been shaded and there were offers this week at 26@27c. per pound. Aniline salts vary in price, according to seller and grade, with 38@45c. per pound quoted.

BICHROMATES.—There were no price changes of importance to feature the market for bichromate of soda during the period. Spot prices have held at 26@38c. per pound, with the difference according to seller. Second hands continue to undersell producers, though on round lots the situation is reversed, as most resellers are able to handle only small amounts. Good interest is reported both for spot material and for contracts. On contracts calling for equal monthly deliveries over next year 25c. per pound is given as the general quotation and business was done at that level during the week. Bichromate of potash is holding steady under moderate demand. The price is 39@40c. per pound.

DIVI-DIVI.—This material is receiving considerable attention from the consuming trades, and a steady market is reported. Leading sellers quote $50@55 per ton, f. o. b. New York.

GAMBIER.—Some large amounts of gambier were received at the local port this week. Conditions in the market do not change much, and prices are quoted at 9½@10½c. per pound. Quantity has been a factor in establishing prices for spot goods. Shipments are quoted at 9@9½c. per pound. No. 1 cube gambier is quoted at 20@21c. per pound.

LOGWOOD.—Logwood chips have been in fair demand, with different prices quoted. Some sellers say that chips of good quality are firm at 5@5½c. per pound. There are sellers, however, at 4c. per pound, and even this can be shaded in some quarters. Logwood also shows a variation in price according to seller and grade, with $30@40 per ton representing the quotation. Logwood extract follows the example of wood and chips, with the result that prices are unsettled and show a wide range. This is partly accounted for by difference in quality. Prices generally are quoted on a basis of 51 degree, and these quotations range from 24c. to 35c. per pound. Hematine paste is easy in price, with offers at 24@30c. per pound. Hematine crystals are quoted at 45@60c. per pound.

MYRABOLANES.—Advices from Calcutta say:—Though the season is practically over, there are still fair stocks of average quality nuts in the country. Quotations are about Re. 1-14 to Rs. 2-12 per B. md. weight, loose, according to quality for near and early deliveries. A fair quantity is regularly being passed out for Europe and America. Local demand is comparatively small. Offerings of picked yellow nuts are very small. Offerings of Australian Bhimries are small. Some myrabolanes came ... local market during the week ... porters are quoting $52@5[illegible] per ...

PRUSSIATES.—Prices for ... siate of potash as sellers are ... at different levels, and in many ... prices are quoted subject to ... sale. Quotations run from $[illegible] per pound. Yellow prussiate of ... is offered by different sellers ... per pound, but 67c. and even ... asked in some quarters. Yellow ... siate of soda is easier and offers ... made freely this week at ... pound, with the quotation ... 45@50c. per pound.

ZINC DUST.—Prices for zinc ... depend on grade, and sellers ... cording to that basis. For ... offers of 90-degree are made ... per pound, and 95@96-degree ... at 27@32c. per pound.

Foreign Trade Opportunities

The Commerce Reports announces ... following foreign trade opportunities ... interest to the readers of the ... and Drug Reporter. Correspondence ... garding the same should be addressed ... the Bureau of Foreign and ... Commerce, Washington, D. C., ... the number of the item referred to.

NO. 22,491.—CINCHONA BARK.

An American export and import firm ... ceipt of samples of cinchona bark, ... product one of its customers in Java ... considerable quantity for sale. Should ... full information will be supplied by the ... the United States.

NO. 22,493.—TANNING EXTRACTS.

An American consular officer in the ... lands reports that a firm in his district ... to communicate with American producers ... exporters of tanning extracts, especially ... nut and oak. The firm wishes the ... agency for the Netherlands. It buys ... own account and pays cash against ... lading. Correspondence may be in ... Bank references.

NO. 22,494.—SAFFRON.

A firm of exporters in Spain informs ... American consular officer that it is ... of entering into business relations with ... ican importers of saffron. Correspondence ... should be in Spanish or French. Refer...

NO. 22,495.—ANILINE DYES.

An American consular officer in Spain ... that a commission firm in his district ... sirous of importing, on a commission ... aniline dyes for use in the textile ... Correspondence should be in French or ... References.

NO. 22,496.—CHEMICALS AND DRUGS.

A firm in Chile writes an American ... officer that it wishes to be placed in ... with American producers and exporters ... following drugs and chemicals:—Sulphur ... in carboys of 1 cwt. 3 qrs., specific ... 1.84, pure and commercial; castor oil, ... clear, tins of 25 kilos net; nitric acid, ... mercial and pure, bottles of 5 kilos; ... sulphuric ether, U. P.; glycerin, ... 50 pounds net in tins; morphine hydrochloride; ... morphine sulphate; resorcin; benzoate of ... sulphoguaiacolate of potassium; salicylate of ... soda; sodium bromide; potassium bromide; ... nine; acetyl-salicylic acid (aspirin). ... spondence may be in English.

NO. 22,498.—ACETIC ACID.

An American consular officer in the ... Isles reports that a wholesale dye ... merchant would like to receive quotations ... 80 per cent. acetic acid, packed in ... Quotations are desired c. i. f. English ... for immediate delivery.

NO. 22,499.—CHEMICALS, ETC.

A firm in Switzerland informs an American ... consular officer that it is desirous of ... placed in communication with American ... ufacturers and exporters of the following ... icals:—Aluminum fluoride; sodium ... calcium fluoride; aluminum phosphate; ... num hydrate; phosphoric acid. Together ... gether with prices f. o. b. New York ... be sent at once. Correspondence may ... English.

NO. 22,500.—CHEMICALS AND DRUGS.

A prominent firm of importers and ... in Spain informs an American consular ... that it desires to export the following ... products, as well as to secure an agency ... their sale in Spain:—Phosphates; permanganate ... of potash; quinine hydrobromate; ... materials for perfumery; pharmaceutical ... chemical products in general. Correspondence ... may be in English. References.

NO. 22,501.—BICHLORIDE OF MERCURY.

An American consular officer in ... transmits the name and address of a ... his district which is desirous of receiving ... fers from American manufacturers of ... ride of mercury in powdered form, in ... packages of 5 to 10 kilos. Correspondence ... Spanish. References.

NO. 22,502.—DRUGS, CHEMICALS, ETC.

A firm in Spain informs an American ... sular officer that it wishes to import ... products, aniline dyes, drugs, etc., on ... mission basis. Correspondence should be ... Spanish or French. Reference.

NO. 22,503.—ALCOHOL.

An American consular officer in the ... Kingdom reports that a firm in his ... wishes to consider offers of commercial ... denatured alcohol. Prices should be ... British ports, if possible.

NO. 22,504.—COLORS AND VARNISHES.

A firm of importers and exporters ... informs an American consular officer ... desirous of securing an exclusive agency ... the sale of aniline colors of all kinds, ... materials to produce aniline colors, ... mosaic printing, colors and varnishes for ... finishing, automobiles, etc. Correspondence ... may be in English. References.

NO. 22,505.—COTTONSEED OIL.

An American consular officer in ... writes that a firm in his district which is ... engaged in representing American manufacturers ... ers of drugs and chemicals, edible products, ... etc., is desirous of representing American ... porters of cottonseed oil. Correspondence ... be in English.

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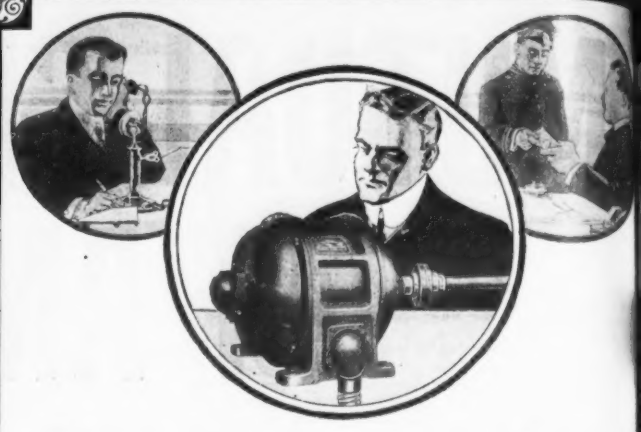

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